10 YEAR REPORT

THE PANAMA CANAL COMMISSION

FY 1980 to FY 1989

A DECADE OF PROGRESS IN CANAL OPERATIONS AND TREATY IMPLEMENTATION

The Panama Canal Treaty entered into force on October 1, 1979. On that historic date, the Panama Canal Commission assumed the important responsibility of managing, operating and maintaining the Panama Canal for the benefit of all nations of the world through the end of the century. After ten years of progress and treaty implementation, the Canal is in excellent condition and continues to provide exceptional transit service at competitive cost. The achievements of the past decade are a tribute to the thousands of Panama Canal employees who, under the leadership of the Administrator, Mr. D. P. McAuliffe, and Deputy Administrator, Mr. Fernando Manfredo, Jr., have maintained the sense of purpose, commitment and excellence which are the tradition of this great enterprise. The Panama Canal Commission will continue to build on this legacy and on December 31, 1999, an improved and well-maintained waterway will be transferred to the Republic of Panama as required by the Panama Canal Treaty.

Revised transit regulations now permit cruise vessels and containerships up to 965′ in overall length, like the "Margrethe Maersk," to be approved for transit.

Message from the Administrator and Deputy Administrator

Mr. D. P. McAuliffe, Administrator (left), and Mr. Fernando Manfredo, Jr., Deputy Administrator, have been serving the Panama Canal Commission since its establishment on October 1, 1979.

The implementation of the Panama Canal Treaty on October 1, 1979, marked a new relationship between the United States and Panama. Under the new arrangement, Panama was provided with an increasingly important role in the operation of the waterway. One thing that remained constant, however, was the enduring mission of the waterway to provide reliable, cost-effective transit service while operating on a self-sustaining basis.

During the past ten years, nearly 115,000 merchant vessels transited the waterway carrying over one and one-half billion tons of cargo to ports throughout the world. Noteworthy was the increase in size of ships using the waterway with the proportion of Panamax vessels, the largest that can transit the Canal, rising dramatically.

At the outset of the decade, this increase in large ships severely tested the Canal's capacity to provide efficient transit service. That challenge was successfully met through aggressive capital investment, accelerated maintenance programs and a series of operational improvements. Today, the Canal is in excellent operating condition with sufficient capacity to meet traffic demand through the life of the treaty and beyond.

An important aspect of the treaty was the requirement for increased participation by qualified Panamanians at all levels of the Commission. This mandate has been followed successfully and has resulted in a steady increase in the proportion of Panamanian employees since the effective date of the treaty. Panamanians now comprise over 85 percent of the work force with much of the increase occurring in the higher skilled positions vital to the Canal operation. Consistent with the requirement to expand the Panamanian component of the Canal work force, the Panama Canal Commission placed major emphasis on training programs to ensure that employees were kept up to date in technological and professional areas, and that well-trained Panamanian candidates were available for vacancies in the agency.

A great deal has been done to modernize and improve the waterway. These achievements have been accomplished by Canal employees who, with their pride and special dedication, have been the key element in preserving the proud tradition and high standards which represent the legacy of the Panama Canal. Despite a decade of sweeping organizational and political changes, and recent civil disturbances in Panama, which have caused unprecedented difficulties and personal hardships for all employees, the Canal continues to provide efficient, safe transit service to international shipping.

In the early part of the next decade, the demanding requirements inherent in the future responsibility of the Republic of Panama as the next steward of the Panama Canal will warrant attention. The Panamanian employees will need assurances as to the type organization that will manage the Canal beginning with the year 2000, as well as terms and conditions of employment and other personnel policies they can expect. The maritime industry must be assured well in advance that the Canal will continue to serve world commerce in a beneficial manner and at competitive toll rates. We are confident that the waterway will be operationally sound and that a virtually one hundred percent, fully-trained Panamanian work force will be in place to meet the needs of world shipping by the year 2000.

It is clear that the Canal today exists in a dynamic and rapidly changing environment. Fundamental changes are occurring in international transportation that could have a significant impact on the future role of the Canal. Nevertheless, as the volume of international trade expands, the all-water routes through the Panama Canal should continue to capture an important share of seaborne commerce. With continued efficient, quality service at competitive rates, the waterway should remain a preferred transportation alternative well into the future.

D. P. McAuliffe
Administrator

Fernando Manfredo, Jr.
Deputy Administrator

The luxury cruise ship "Star Princess" set a new Canal toll record on May 18, 1989 paying $109,653.60.

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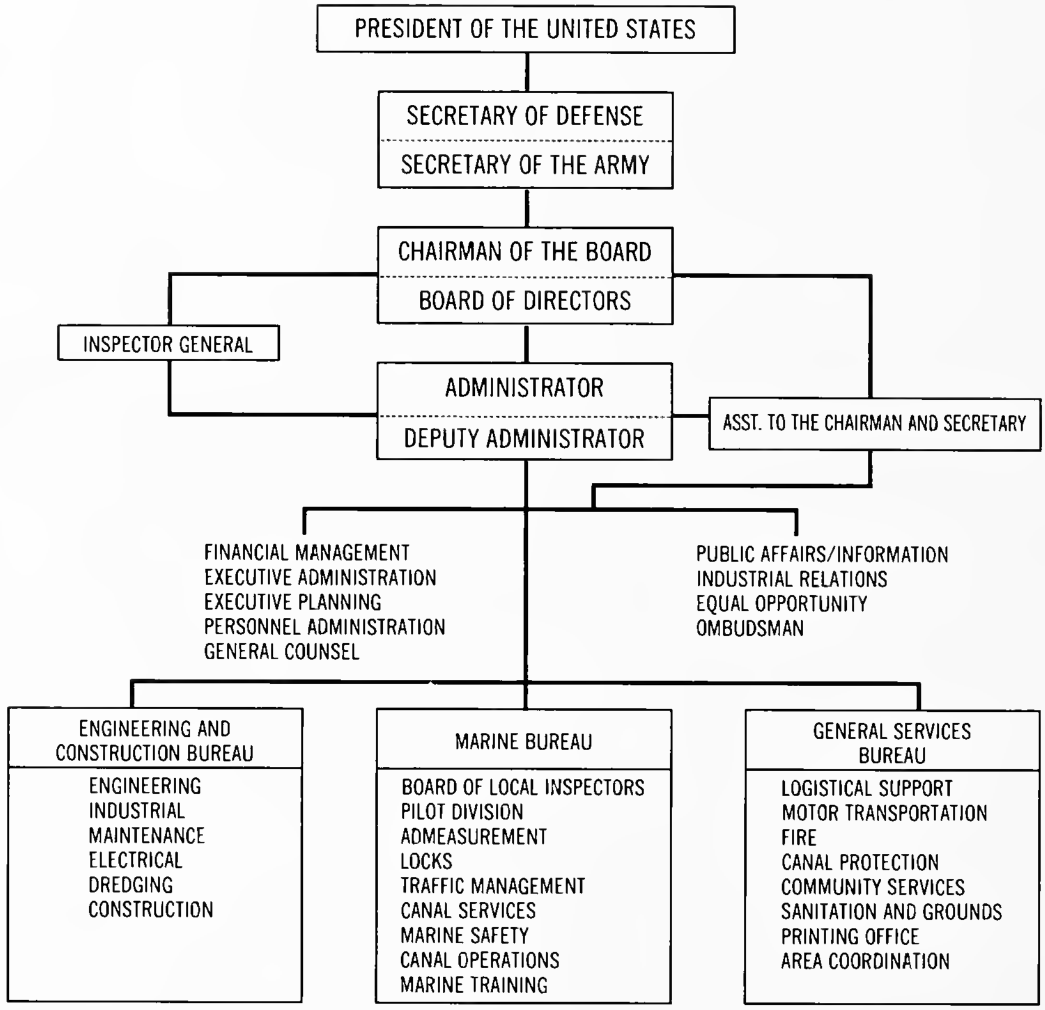
Organization



The Panama Canal Commission is an agency of the Executive Branch of the United States Government, provided for by the Panama Canal Treaty of 1977, and established by the Panama Canal Act of 1979 (Public Law 96-70). The President of the United States exercises authority over the Commission through the Secretary of Defense and the Secretary of the Army. The Commission is supervised by a nine-member Board of Directors; five are nationals of the United States appointed by the President with the advice and consent of the Senate, and four are Panamanian nationals proposed by the Republic of Panama for appointment by the President of the United States. At the operational level, the Commission is managed by a U.S. Administrator and a Panamanian Deputy Administrator. In accordance with the treaty, effective January 1, 1990, a Panamanian citizen is scheduled to serve as Administrator, with a United States citizen fulfilling the responsibilities of Deputy Administrator. The Administrator, regardless of nationality, is appointed by the President of the United States with the advice and consent of the Senate, and the Deputy Administrator is appointed by the President. Panamanian nationals for these top level positions are proposed by the Republic of Panama.

The Commission was established on October 1, 1979, to carry out the responsibilities of the United States with respect to the Panama Canal under the treaty. The agency is tasked with managing, operating and maintaining the Canal through the expiration of the treaty at noon, Panama time, on December 31, 1999, at which time the Republic of Panama will assume full responsibility for the Canal. A separate Treaty Concerning the Permanent Neutrality and Operation of the Panama Canal, which has no expiration date, provides for the peaceful transit by vessels of all nations on terms of equality.

Panama Canal Commission
Board of Directors

Present and Past Members

Honorable Michael Blumenfeld
Chairman
Washington, D.C.
FY 1980-FY 1981

Honorable William R. Gianelli
Chairman
Washington, D.C.
FY 1981-FY 1989

Honorable Robert W. Page
Chairman
Washington, D.C.
FY 1989-Present

U.S. MEMBERS

Honorable John A. Bushnell
Washington, D.C.
FY 1980-FY 1986

Honorable John W. Clark
New Orleans, LA
FY 1980-FY 1982

Honorable Clifford O'Hara
New York, NY
FY 1980-FY 1982

Honorable William Sidell
Poway, CA
FY 1980-FY 1986

Honorable Andrew E. Gibson
Short Hills, NJ
FY 1982-Present

Honorable William W. Watkin, Jr.
Brevard, NC
FY 1982-Present

Honorable Richard N. Holwill
Washington, D.C.
FY 1986-Present

Honorable Walter J. Shea
Annapolis, MD
FY 1986-Present

PANAMANIAN MEMBERS

Honorable Edwin Fabrega
Panama, R.P.
FY 1980-FY 1983

Honorable Roberto M. Heurtematte
Panama, R.P.
FY 1980-FY 1982

Honorable Tomás Paredes
Panama, R.P.
FY 1980-FY 1983

Honorable Ricardo A. Rodríguez
Panama, R.P.
FY 1980-FY 1983

Honorable Luis A. Anderson
Panama, R.P.
FY 1983-FY 1989

Honorable Fernando Cardoze
Panama, R.P.
FY 1983-FY 1986

Honorable Oyden Ortega
Panama, R.P.
FY 1983-Present

Honorable Carlos Ozores
Panama, R.P.
FY 1983-Present

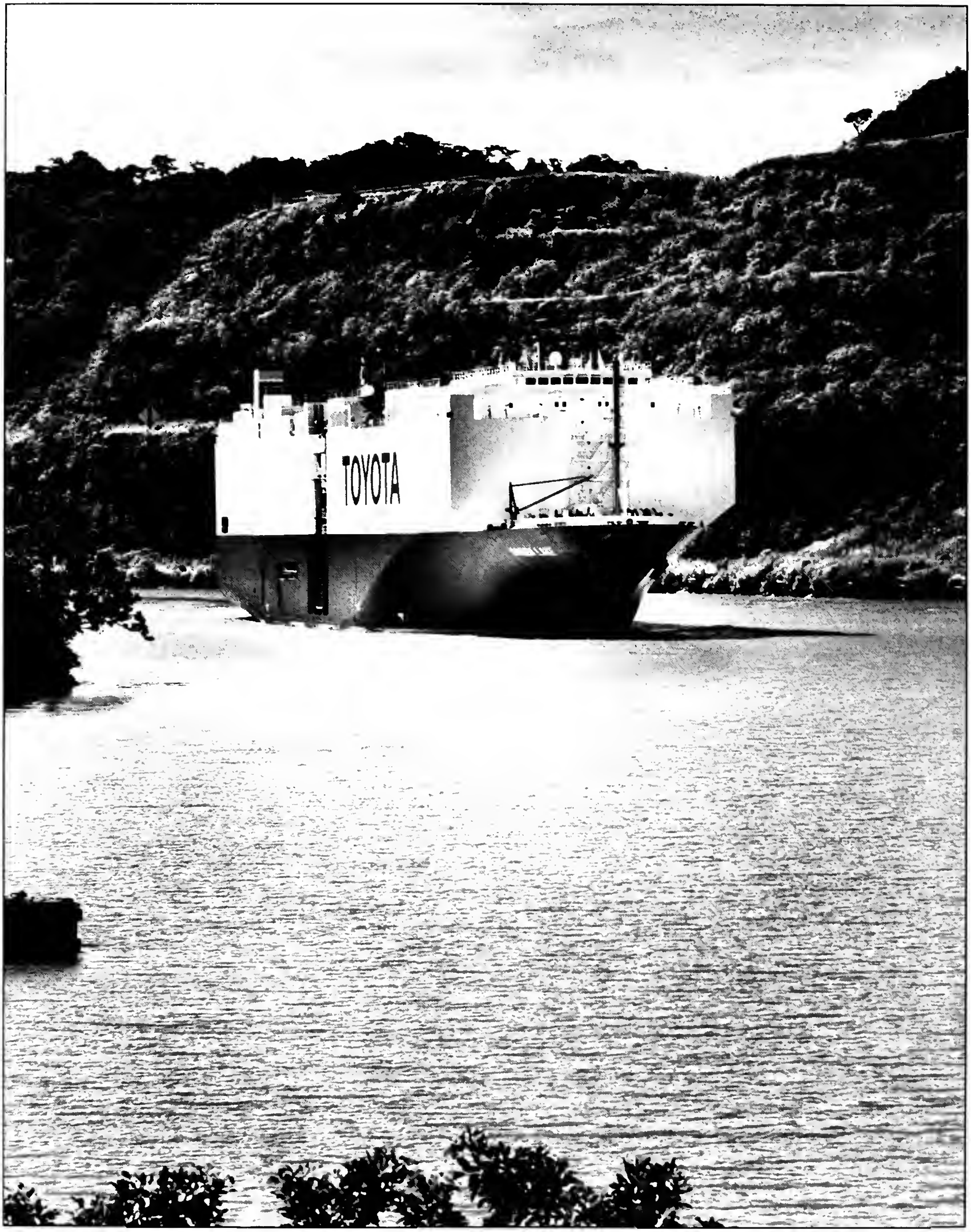
Honorable Carlos Velarde
Panama, R.P.
FY 1986-FY 1989

OFFICIALS IN THE REPUBLIC OF PANAMA

Administrator . . . . **Honorable D. P. McAuliffe**
Deputy Administrator . . . . **Honorable Fernando Manfredo, Jr.**

OFFICIAL IN WASHINGTON, D.C.

Assistant to the Chairman and Secretary . . . . **Michael Rhode, Jr.**



Specialty vessels like the car carrier "Green Lake" regularly transit the Canal, delivering fully assembled, damage-free automobiles along the U.S. Gulf and Eastern seaboard.

Canal Traffic and Tolls Revenue

Overview

Canal traffic and tolls revenue ebbed and flowed through the decade of the 1980's as world economic and trade patterns shifted and new developments continued to transform the transportation industry. At the outset of the period, huge flows of Alaskan North Slope (ANS) oil combined with spiralling shipments of grain and coal to push Canal business to all time highs in FY 1982. The bubble burst suddenly the very next year with the diversion of ANS to a newly opened trans-Panama oil pipeline, plummeting demand for U.S. coal, and a worldwide economic recession. The result was the most severe decline in Canal traffic since the Great Depression and by FY 1984, use of the waterway had fallen to the lowest level since FY 1977. A growth pattern re-emerged in mid-decade led by sharp increases in containerized cargo and automobiles, coupled, in more recent years, with a resurgence of the volatile grain trade.

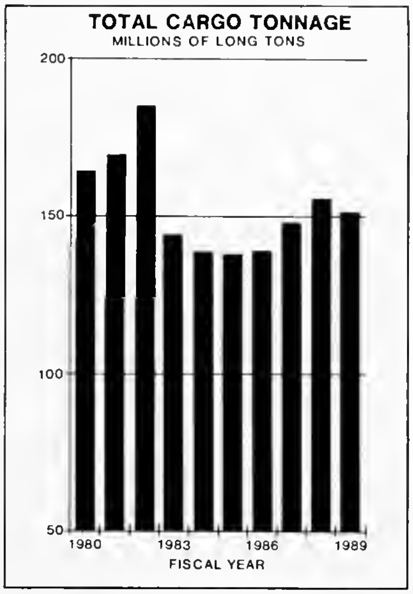
The expansion of the container and automobile trades encouraged the building of many third generation containerships and larger, specialized vehicle carriers. By FY 1988, these two vessel types alone accounted for over one-third of total Panama Canal net tons and tolls revenue. Containerships and vehicle carriers contributed heavily to the overall increase in large vessel transits during the decade. Transits by PANAMAX vessels (beams of 100 feet or greater) rose from 14 percent of all oceangoing transits in FY 1979 to almost 23 percent by FY 1989.

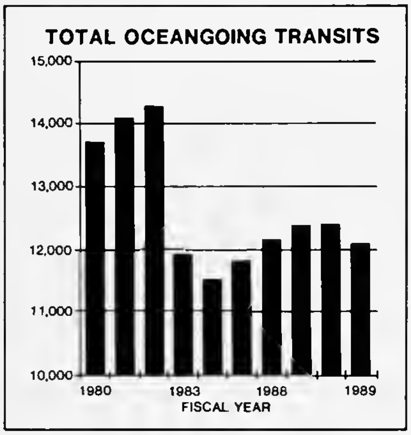
In the last year of the decade, a slowdown in U.S. and Japanese economic activity and a sharp decline in the grain trade, precipitated a fall in Canal traffic from the near record levels reached in FY 1988. Nevertheless, over 12,000 oceangoing vessels, carrying almost 152 million long tons of cargo, passed through the waterway in FY 1989 and traffic is anticipated to rise further in the ensuing decade.

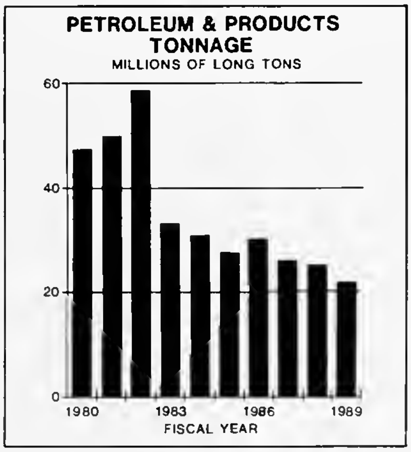
Traffic and Tolls Revenue Highlights

Canal traffic and tolls revenue surged to record levels in FY 1982. In that year, 14,142 oceangoing vessels, carrying 185.7 million long tons of cargo transited the Canal. The main factor behind the record setting traffic was the ANS oil trade. At its peak in FY 1982, the ANS trade generated more than 1,500 tanker transits and about $50 million in annual tolls revenue. In October 1982, ANS oil diverted from the Canal to a newly opened trans-Panama oil pipeline, reducing the Canal's total tolls revenue by about 15 percent and prompting Commission management to raise toll rates by 9.8 percent in March 1983. The loss of the ANS trade also reduced average ship size through the Canal. For the first time in 20 years, the trend toward larger vessels was interrupted. By FY 1984, vessels in the 100-ft beam and over category had dropped to 2,170 compared with 2,681 in the peak year FY 1982.

The loss of the ANS oil occurred in conjunction with a worldwide recession and plummeting demand for coal. The Canal coal trade, which had experienced a temporary resurgence in the early 1980's, reached 23 million tons by FY 1982, but fell by over half to 11 million tons in FY 1983. By the end of the decade, coal shipments through the Canal had dwindled further as the U.S. share of the Far East coal market continued to decline



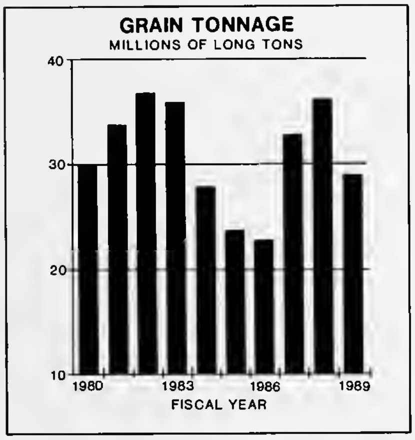




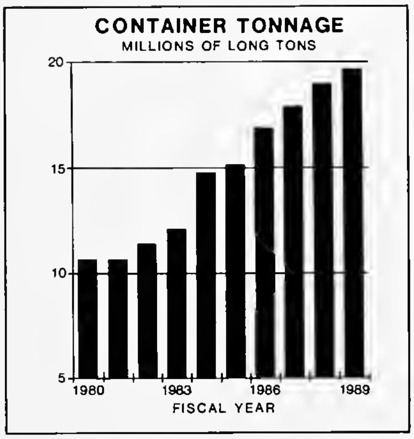
The "Guía," one of the Canal's newest tugs, aligns the PANAMAX-size containership "Ever Gleamy," as it prepares to enter a lock chamber.

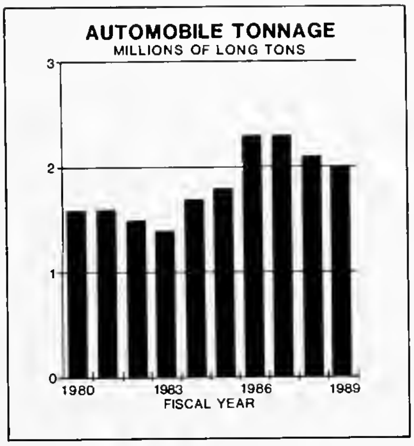
and bypass movements via the Cape of Good Hope on ships too large to transit increased.

Grain was another commodity that contributed to the FY 1982 boom in Canal business. The grain trade, influenced by many factors, is highly volatile and has fluctuated sharply over the years. In FY 1982, an all-time high of 37.6 million long tons was recorded. Almost 80 percent of the grain moved via the Canal consisted of U.S. exports to the Far East, with Japan and China as the main destinations. Chinese imports of wheat from the U.S. through the Canal in FY 1982 reached record levels, with the tonnage at almost 8 million tons. Grains continued strong in FY 1983, but plunged over 23 percent to 28.1 million tons the following year, affected by diversions of U.S. corn exports destined for the Far East from Gulf ports to West Coast ports. Grain shipments rebounded sharply in FY 1987 and FY 1988, rising 41 percent and 11 percent, respectively, in the two years. This trade was a key factor in the post FY 1982 record level achieved by Canal traffic in FY 1988. With characteristic volatility, however, the grain trade plunged 18 percent in FY 1989, accounting for much of the year's severe downturn in traffic.

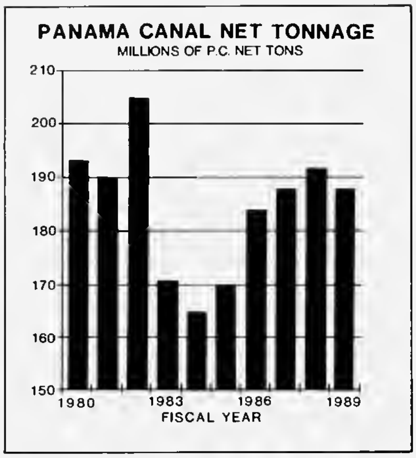


The sustained recovery in Canal traffic that began in the mid-1980's was fueled, to a great extent, by sharp increases in the container and automobile trades. The primary driver behind the increases in both groups was the expansion of the U.S. economy, with the strong dollar fueling sharp increases in U.S. imports, particularly from the Far East. The expansion of trade stimulated the emergence of third generation containerships and larger, specialized automobile carriers.





During the latter part of FY 1984, the world's largest containerships, deployed in round-the-world services, began using the Canal. By the end of fiscal year 1986, these container operations were in full gear and total containerized cargo via the Canal had increased to 16.9 million tons compared with 12.2 million in FY 1983. The increase in U.S. imports from the Far East was of such magnitude that both the all-water route via the Canal and the competitive U.S. intermodal system experienced container cargo increases of major proportions. As the yen appreciated against the dollar, however, U.S. imports of container cargo via the Canal began to decline. U.S. export growth began to outpace import growth with net container shipments in FY 1987 and FY 1988 continuing to display increases, although not at the spectacular rates of the previous three years. In the last years of the decade, although the container trade continued strong, the Canal experienced a decline in the growth rates of the container movement and



market share was lost to the U.S. intermodal system with its rapidly expanding double stack trains. Despite the success of intermodalism, the Canal container trade is anticipated to grow further in the years ahead.

Japanese exports of automobiles to the U.S. was the leading factor in the Canal's recovery from the FY 1983 trough. Japanese automobile shipments through the Canal rose 35.3 percent to 1.8 million tons in FY 1986 from FY 1985 levels and continued strong in FY 1987. The large, new vehicle carriers are the highest paying vessel types at the Canal and the trade accounted for approximately one-fifth of all tolls revenue in the latter half of the decade. The increasing trade in automobiles halted in FY 1988 and shipments have been declining through FY 1989. The downward trend reflected a shift in sourcing patterns as production of Japanese cars in plants established in the U.S. began to replace imports. The declining dollar against the Japanese yen and the need to avoid import restrictions were factors that stimulated the transplant of Japanese car manufacturing plants to the U.S. By FY 1989, the loss of Japanese vehicle shipments had accelerated, contributing to a general falloff in Canal business.

The erosion in traffic which began in FY 1989 is expected to continue in FY 1990 as the pace of economic activity in the regions that largely determine Canal trade growth slows further. Over the long term, however, use of the waterway is forecast to rise and the Canal will remain a vital link in world trade. ■■

Parallel lock chambers give added transit and maintenance flexibility.

Panama Canal Traffic and Tolls Revenue

Fiscal Year	Oceangoing Transits	Total Cargo *(Long tons)*	Total Tolls Revenue
1989	12,075	151,868,548	$329,765,627
1988	12,318	156,780,203	$339,319,326
1987	12,313	148,899,425	$329,858,775
1986	12,023	140,125,818	$322,734,202
1985	11,654	138,903,258	$300,807,914
1984	11,384	140,801,136	$289,155,035
1983	11,846	145,948,818	$287,791,023
1982	14,142	185,738,781	$325,589,097
1981	13,984	171,524,895	$303,080,358
1980	13,614	167,612,203	$293,443,943

Improvements, Modernization and Maintenance

High mast lighting

Marine Traffic Control Center

Locks overhaul

To meet the challenges and keep pace with the growing demands placed on the waterway in the early years of the decade, Commission management intensified efforts to modernize and improve the waterway. This commitment continued throughout the decade with the Commission investing over one billion dollars to complete major Canal improvement projects already underway, implement new capacity programs and improve navigational safety. Major maintenance programs were also accelerated with a view towards minimizing downtime and extending the productive life of Canal improvements. The long-term objective of these actions was to continue to ensure safe, efficient and reliable transit service for world shipping well into the next century.

Recognizing the increasing competitive nature of the transportation industry and the need to develop a greater awareness of the advantages offered by the Panama Canal, the Commission established a marketing program in 1983. Primary among the goals of the marketing function was the strengthening of ties with existing Canal customers, exploring and developing new market sources, and maintaining a perception in the marketplace that the Canal is an efficient and economically advantageous transportation alternative for world trade. Since its inception, top management officials of the Commission, accompanied by marketing personnel, marine and public relations representatives, have participated in selected maritime expositions and conferences, personally conducted economic/marketing surveys of major Canal customers and other maritime related organizations, and developed closer relationships with leading port authorities worldwide. Face-to-face meetings between customers and Canal management officials provided the opportunity for candid discussion of problems and a more immediate response to those concerns. Other marketing efforts which produced a positive response were briefings and presentations by Commission officials locally and abroad to important segments of the maritime industry, representatives of U.S. and foreign governments, military associations, civic organizations and private industry. Extensive use of advanced telecommunications, trade journals, periodicals and press conferences also has kept world shipping abreast of new Canal technology, equipment and improvement programs. These marketing efforts have been extremely important in promoting the Canal as a dedicated service organization which is responsive to customer needs.

The Canal today is a well engineered, efficient facility incorporating state-of-the-art technology including an extensive, modern communications network. Ships arriving at the waterway encounter minimum delays and, on average, spend less than 24 hours in Canal waters. An experienced, skilled team of Commission professionals ensures arriving vessels receive a secure, rapid, around-the-clock transit. A transit reservation system was implemented for vessels desiring a guaranteed day of Canal transit.

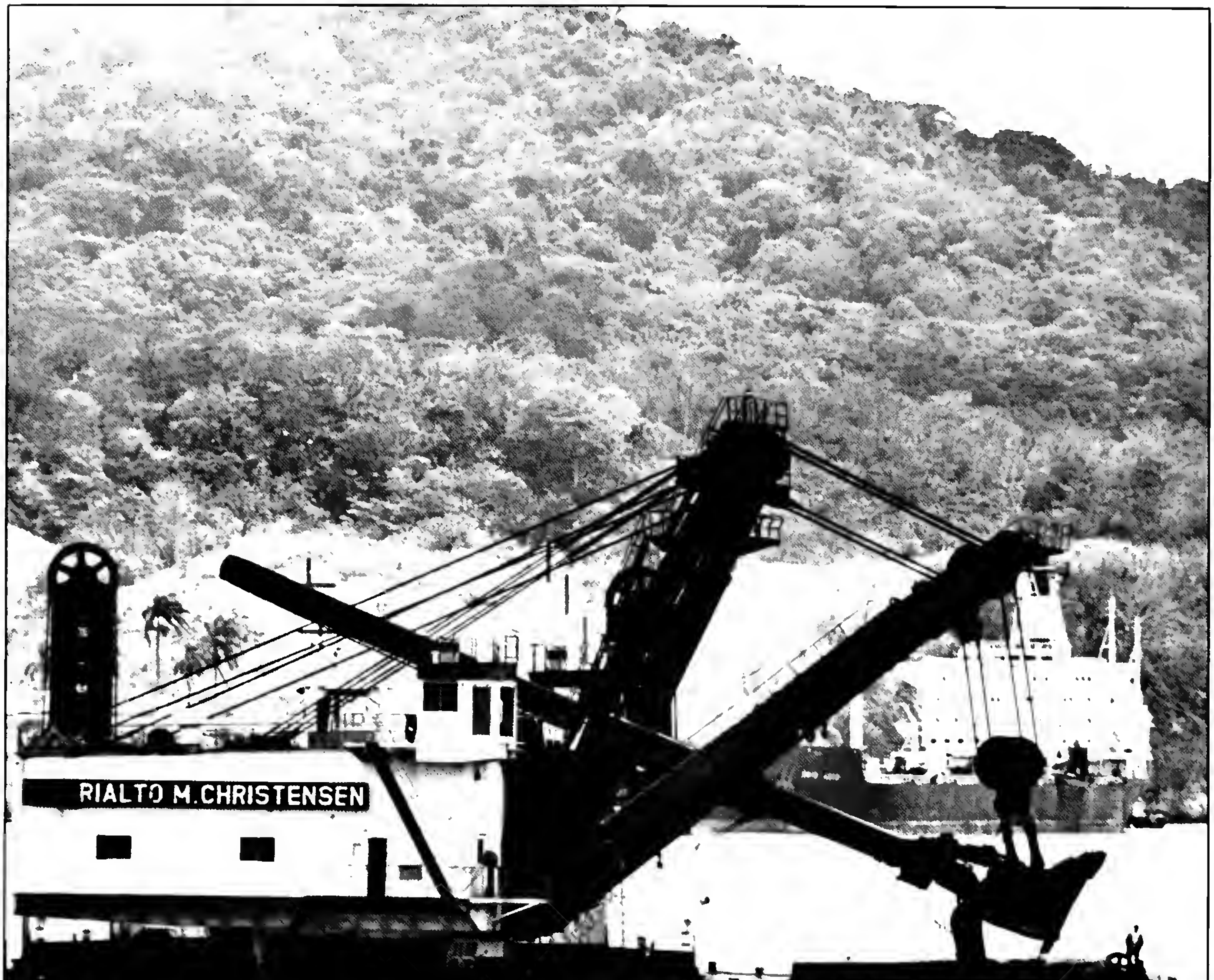
A number of significant accomplishments to increase the capacity, efficiency and safety of the Canal were achieved during the decade by building on earlier laid foundations, as well as by the initiation of new efforts.

Capacity Expansion and Channel Improvements:

High Mast Lighting—Completion of the high mast lighting project at all locks in the early 1980's effectively extends the number of hours during which large vessels can transit, as well as provides improved visibility at night for smaller vessels. The increased capability of the locks to transit more vessels at night has been a major capacity enhancement.

Additional Locks Towing Locomotives—Fifteen towing locomotives, costing more than $1 million each, have been acquired. Expanding the fleet to 80, this new equipment provides improved transit capability at the locks.

Replacement of Locks Towing Locomotive Turntables—This is an ongoing major project to replace towing locomotive turntables at all locks to allow earlier attachment of locomotive wires to vessels to provide greater control during lockages. The installations also provide switching and parking facilities for additional locomotives and facilitate relay lock-



Channel deepening and maintenance dredging are critical to the safe and efficient transit of vessels.

ages conducted during locks overhauls.

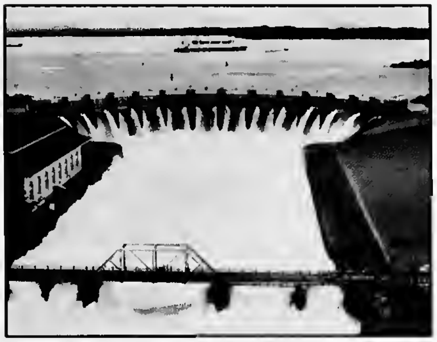
Upgraded Tugboat Fleet—This is a continuing program to acquire new, more powerful and highly maneuverable tugboats to provide more efficient service to transiting ships, particularly wide beam vessels. Contracts for the construction of ten new tugs were awarded during the decade at a cost of between $3.0-$4.2 million each. The Commission transit tugboat fleet now numbers 17 and additional replacement tugs are on order.

Acquisition of High Speed Launches—Five special high speed launches were recently acquired to provide rapid, secure and uninterrupted movement of pilots and other key personnel to work stations along the Canal. The launches serve as alternative transportation to the hazardous and deteriorated highway across the Isthmus.

Vessel Tie-up Station—A multi-million dollar mooring station constructed just north of Pedro Miguel locks increases the efficiency of the Pacific locks by providing a holding area for northbound and southbound vessels with special Gaillard Cut restrictions. The station can also accommodate disabled ships and provide a safe haven for vessels during periods of heavy fog.

Expansion of Gatun Lake Anchorage—The substantial enlargement of the Gatun Lake Anchorage permits more efficient utilization of Gatun Locks. Relocation of buoy markers and clearing the anchorage area added 270 additional acres and enlarged the anchorage by approximately 35 percent. The adjoining Explosives Anchorage provides an area to hold ships carrying hazardous cargo at a safe distance from the locks, other vessels and townsites.


New high speed launch


Controlling lake levels

Deepening of the Ship Channel—Completion of this major dredging program to deepen the Canal channel from south Gatun Locks to north Miraflores Locks involved the removal of 6.3 million cubic yards of earth and rocks. Increased water availability for lockages now virtually assures a maximum allowable draft of 39.5 feet year-round for transiting vessels. This project has proven to be of considerable economic value to the maritime community by allowing vessels to fully load to maximum Canal draft without restrictions. Since the project was completed in May 1984, there has been no requirement to reduce draft.

Canal Widening Projects—Completion of Canal widening projects at Mamei Curve, Bohio Curve, Gamboa Reach and south Miraflores Locks approach provide for improved maneuverability, navigational safety and visibility in the Canal channel. These projects involved eight years of major dredging and excavation work costing millions of dollars. Other excavation projects to improve visibility and stabilize slopes along the Canal channel were accomplished at La Pita Hill and Lirio Hill. Widening of the Pacific entrance channel was begun in FY 1989 with completion scheduled for FY 1990.

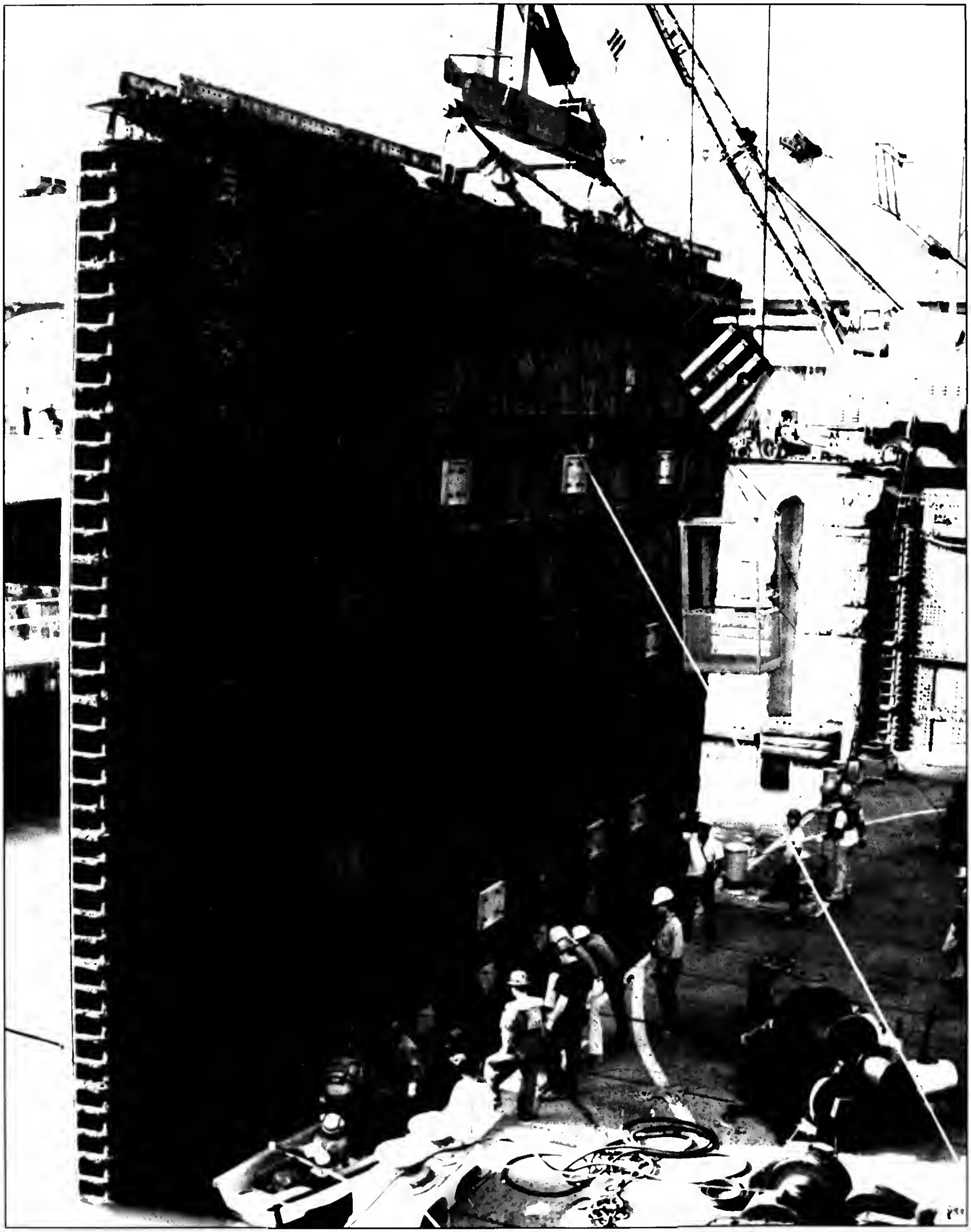

Vessel tie-up station

Operational and Safety Related Improvements:

Installation of Major New Computerized Traffic Management System in the Marine Traffic Control Center—A major upgrading of the computerized traffic management system provides for more efficient and safe coordinated movement of vessels throughout the Canal. The new system features provide an integrated source of data available to key operational units along the length of the Canal. Ongoing improvements will further expand system capabilities in the future.

Transit Reservation System—A reservation system allows customers to schedule a guaranteed day of Canal transit for a nominal fee. Initially implemented on a trial basis at the request of Canal customers, the system was approved for permanent use following careful analysis and public hearings. The revenues received are used to assist in funding the Canal's capital program. The system has been used extensively, particularly by liners with fixed schedules and ships carrying perishable cargoes.

Longer Vessels Approved for Transit—Revised transit regulations permit



Removal, rehabilitation and reinstallation of the massive 700 ton miter gate leaves is one of several major maintenance efforts during a locks overhaul.

Buoy maintenance

passage of most oceangoing vessels whose total length does not exceed 950 feet. Containerships and passenger vessels up to 965 feet in total length are now approved for transit.

Streamlined Vessel Accident Investigation Procedures—Streamlined accident investigation procedures have effectively minimized delays to shipping by reducing the response time of key personnel needed to investigate, assess and develop findings in marine accident cases. While the Canal has an excellent ship safety record, marine safety has always been an important concern.

New Signal Station—A new modern signal station was constructed on top of Building 1105 at Cristobal. Marine type radars are being installed in both the Atlantic and Pacific signal stations to permit earlier vessel identification, provide improved communication between Canal transit officials and arriving vessels and to enhance safety.

Buoy Conversion—Modifications to Canal buoys, beacons and navigational markers now conform with the standards set by the International Association of Lighthouse Authorities (IALA). Used by most countries around the world, the IALA system provides for clearly defined and uniform navigational markings.

Installation of a Synchrolift—A $3.7 million elevator-type dry dock with net lifting capacity of 1,600 long tons at the Mount Hope Industrial Division improves maintenance capability for overhaul of locks miter gates and much of the Canal's floating equipment. Installed in April 1985, it also serves to augment the adjacent Mt. Hope dry dock and launch repair facility.

New Locks Firefighting Systems—A multi-phase program will upgrade and augment firefighting equipment and facilities at all locks with the latest in marine foam protection systems. When completed, the new system, costing several million dollars, will provide greater protection against major hazardous risks and avoid potential damage to locks facilities, machinery, equipment, personnel and transiting vessels.

New Weather Monitoring and Reservoir Management Equipment—An integrated network of state-of-the-art computer, radar and electronic equipment with satellite imagery provides accurate, current data on weather conditions, lake levels, and potential and actual inflows to the watershed.

Maintenance Programs

Maintenance is the cornerstone of the day-to-day operation of the Panama Canal and these programs receive top priority. Key programs responsible for maintaining the Canal in prime condition were:

Annual Locks Overhauls—Programmed annual overhauls of selected locks involve extensive upper and lower chamber work and replacement or repair of underwater equipment. This work normally includes removal, complete rehabilitation and reinstallation of several of the massive miter gates; and inspection and repair of all electrical systems and components, valves, seals and culverts. Accomplishment of locks overhauls requires more than 1,000 employees and an annual investment of some $5 million.

Towing Locomotive Rehabilitation Program—During the decade, 57 locks towing locomotives and three electric locomotive cranes were rehabilitated at the Commission's modern, fully-equipped towing locomotive repair facility. The locomotive repair facility significantly increases the locks capability to overhaul locomotive traction units and windlasses. Each unit was rehabilitated at approximately one-fourth the cost of a new locomotive, while also extending its service life by an estimated 20 years.

Locomotive Tow Track Rehabilitation—Extensive maintenance and rehabilitation of approximately 50,000 linear feet of the locomotive tow track's waterside rail was accomplished as well as the critical sections of the landside rail, rack sections and conductor slot. Waterside rail was upgraded from 90 to 105 pound rail to handle greater stress loads exerted by the increasing number of large vessels. A unique procedure, the "alternate tie method," was developed which permitted the removal and replacement of alternate rail ties together with the concrete foundations, thus permitting the track to be repaired without interfering with the movement of transiting vessels.

Locomotive tow track work

Overhaul of Flood Gates at Dams and Spillways—Major overhauls of floodgates at dams and spillways were conducted. The efficient functioning of floodgates is essential to controlling maximum lake levels during periods of heavy inflows.

Maintenance of Power and Water Systems—This is an ongoing project to improve and maintain the capacity and reliability of the Canal's power and water systems.

Replacement of Damaged or Worn Fendering at all Locks—All old fendering is being replaced with new state-of-the-art high strength, wider load distribution-surface fendering which is more durable and resistant to abrasion and deterioration.

Overhaul of Floating Equipment—This is an ongoing program to maintain Canal dredges, tugs, launches, barges and other floating equipment in top condition.

Routine Dredging of the Ship Channel—Depth surveys and routine dredging are conducted throughout the year to ensure maximum allowable channel draft for large vessels.

LANDSLIDE CONTROL MEASURES—CUCARACHA LANDSLIDE

A major landslide in Gaillard Cut, which dumped approximately one-half million cubic yards of rock, earth and debris into Canal waters, occurred on October 13, 1986. About half of this material caused a narrowing of the navigable channel in the area of Gold Hill. Commission resources and equipment were immediately dispatched to the slide area to begin removal of slide material and to settle unstable areas resulting from the slide. Two dredges and related equipment were simultaneously contracted from the United States to assist in the removal effort. Precautionary transit measures, temporarily instituted in the interest of navigational safety, were progressively withdrawn until full channel width and normal Canal operations were restored on December 23, 1986.

The ready response and effective restoration efforts by the Commission team were responsible for maintaining the Canal channel open throughout the crisis. The international maritime community expressed extreme gratitude and appreciation to the Commission for the rapid restoration of the channel to normal conditions and for the manner in which the traffic was handled during the challenging situation.

The Commission continued to implement landslide control measures to improve bank stabilization in the slide area, including extensive preventive excavation and drainage improvements. Reforestation of the affected areas was also undertaken to control erosion and minimize the environmental impact of these projects. A Geotechnical Advisory Board, composed of four eminent geotechnical engineers from the United States and Canada, was established to develop findings and make recommendations in connection with slide control efforts.

The Board convened on a number of occasions to recommend appropriate slide control measures and perform on-site inspections to examine techniques and progress. The Board's final report complimented measures being taken by the Panama Canal Commission and emphasized the importance of continued maintenance.

OTHER PROJECTS

Gaillard Cut Widening—In the mid 1980's, the possibility of a potential limitation to the transit capacity of the Canal led Commission management to undertake a major, multi-faceted study to determine the feasibility of widening Gaillard Cut to allow unrestricted, two-way passage of all vessels, regardless of beam size. Technical analysis was required to establish a theoretical channel design, obtain geotechnical information, and to determine construction methodology and cost. Analytical support was obtained from the Computer Aided Operations Research Facility (CAORF) at Kings Point. The U.S. Army Corps of Engineers also assisted Commission engineers and technicians in the geotechnical investigation and construction methodology. Other elements of the study included an environmental analysis; evaluation of a variety of financing options; and a long-range traffic demand forecast of cargo tonnage, revenues, transit levels and ship size characteristics through the year 2010. Still pending are economic and operational analyses, based on current long range traffic forecasts, to determine if, and when, the widening should be accomplished. The project, if undertaken, would require the removal of approximately 34 million cubic yards of material at an estimated cost of between $300 to $400 million in current dollars.

In addition to the various technical studies to determine feasibility and need, Canal customers will be given ample opportunity to present views on the project's desirability as well as on the funding implications if it is determined that the project will be necessary in whole or part. Appropriate liaison with all concerned parties, including the U.S. Congress, will be conducted prior to any decision on the project. ■■

A PANAMAX-size containership navigates past the Cucaracha landslide, while dredges worked around the clock to clean up slide debris.

A partial view of Gaillard Cut looking north.

Financial

On October 1, 1979, the Panama Canal Commission began operation as an appropriated-fund agency, assuming all the assets and liabilities of the Panama Canal Company and the Canal Zone Government, its predecessor agencies. Although receiving its annual funding requirements through the appropriation process, all costs associated with operating and maintaining the waterway continued to be borne solely by revenues generated from Canal operations, exclusive of any U.S. taxpayer monies. To accomplish this, a special fund was established in the U.S. Treasury into which Canal receipts would be deposited, and from which funds necessary to cover Commission expenditures would be appropriated. This funding arrangement separated Commission resources from other U.S. Government monies and gave the Congress the means to monitor the Canal's ability to operate on a self-financing basis as mandated by U.S. law. In order to incorporate the concepts and requirements of appropriation laws and regulations, the Commission made changes to its system of financial records inherited from the former Canal agencies. These changes covered the broad areas of management policies and procedures, the agency's budgeting process, and the capabilities of recording all accounting transactions under businesslike accrual accounting methods while maintaining financial data as required under governmental appropriated-fund procedures.

Effective with treaty implementation, the Commission increased toll rates by 29.3 percent, the largest rate jump in the Canal's history. A rate increase of this magnitude was required in order to pay, out of Commission earnings, over $70 million dollars annually to the Government of Panama as a result of certain payment formulas agreed to in the treaty.

A major milestone in the financial history of the Canal was the approval of the Commission's Statement of Accounting Policies and Related Principles and Standards by the Comptroller General on September 14, 1982. With this stamp of approval, the Commission became one of the few Federal agencies having in place an approved system of accounting policies and principles upon which the processing and reporting of all its accounting transactions are based.

In October 1982, construction of the trans-Panama oil pipeline was completed, and with its opening, the number of oil-carrying vessels transiting the canal from Alaska's North slope to the East coast of the United States began to decline dramatically, resulting in an annual revenue loss of approximately $50 million. As a result of this, the Commission, after implementing major cost-reduction measures, was again forced to raise toll rates, effective on March 12, 1983, by 9.8 percent in order to maintain revenue levels at or near Canal operating costs.

As worldwide inflation continued on the rise, the Commission recognized the need for more timely reporting of the Canal's day-to-day financial situation. Consequently, the Commission, in 1984, began to upgrade its data-processing capabilities. Included in this major

Computers are commonplace in most Commission offices, improving productivity and removing the tedium of complex compilation and computation of data.

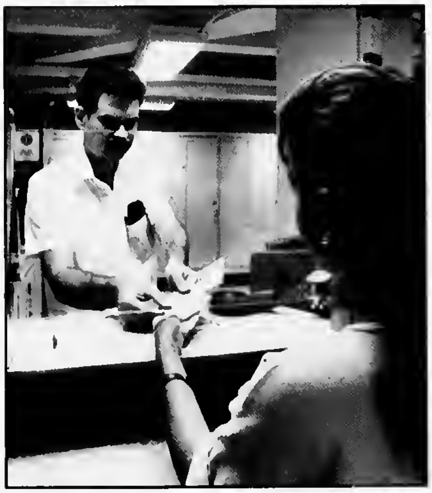
undertaking was the installation of multiple IBM mainframe computers, installation of on-line/real-time processing in certain critical systems, and data entry and inquiry capability from remote locations. At the same time, personal computers were introduced into the Commission on a wide-scale basis, both as stand-alone systems and as on-line work stations integrated with the Commission's central computer facility. At the forefront of the agency's computerized applications were the Commission's Financial Management System (FMS) and Marine Traffic Control System (MTCS).

The FMS is a state-of-the-art system which fully integrates fund control and accounting functions as well as providing integrated software for processing and producing the Commission's General Ledger, Budgetary Control reports, and Accounts Receivable and Payable records. Electronically interfaced with the new system were the previously computerized systems of payroll processing, inventory management and control, and project and job reporting. The MTCS was developed jointly with the Canal's Traffic Management Division, and provides centralized scheduling and control over vessel transits and their movements within Canal basin and harbor areas. Data within the system also provides the basis for pilot assignments, linehandler schedules, and towboat and launch requirements. Beginning in FY 1990, the MTCS data bank will be the source for electronically preparing billings for tolls and other navigation services.

In late 1985, Congress enacted legislation authorizing the Commission to purchase insurance which would indemnify the Canal against a major loss resulting from an accident or natural event of severe or catastrophic proportions. Under this authority, the Commission purchased an all-risks catastrophe policy in December 1987, and became, essentially, the first Federal agency operating under the umbrella of commercial insurance protection. This insurance has been renewed in each subsequent year; and based on the Canal's track record, should be available, at Panama's option, after the year 1999.

In January 1988, with enactment of Public Law 100-203, the Commission was converted from an appropriated-fund to a revolving-fund agency, thereby removing it from the annual governmental appropriation process, but retaining Congressional oversight of the Commission's annual budget. As a result of this legislation, Congress formally acknowledged the financial independence of the Canal free from the use of any U.S. taxpayer monies. The costs of operating the waterway, including all capital replacements and improvements, are funded solely from income received from Canal customers; and toll rates and other service fees are promulgated on a cost-recovery, break-even basis. As with any large commercial enterprise, the management and application of Commission resources are continuously modified to respond to fluctuations in Canal

Some 1,000 on-line workstations throughout the Commission are monitored by network control operators in the central computer facility. The facility includes five major mainframe computers and supports numerous state-of-the-art on-line applications.



Employee check cashing services continued without interruption during a lengthy banking crisis in Panama.

traffic and work load; and under a revolving-fund structure, management is guaranteed the flexibility to meet such challenges. In the year 2000, when stewardship of the Canal is passed to the Government of Panama, the revolving-fund format will serve as a good example for their consideration in determining what type of financial structure the waterway should operate under.

In March of 1988, the Government of Panama ordered all banks operating in the Republic to close their doors. This decree was in response to the political upheavals and the deteriorating economic conditions plaguing the country. As a result of this unprecedented action, the Commission, overnight, was denied access to its funds on deposit with the Chase Manhattan Bank and Citibank and stripped of all local commercial banking services and support. Crowning the agency's banking dilemma was the attendant loss of its ship-guarantee procedures which had been in place since the Canal began operations. The cornerstone of these procedures was the security deposits held in local banks that served as collateral, guaranteeing in advance, payment of all toll and navigation fees for services provided vessels.

In response to this loss, the Commission instituted emergency ship-clearance procedures to ensure the uninterrupted flow of Canal traffic, and arranged with its customers to immediately establish offshore security deposit accounts with banks located in the United States earmarked as Panama Canal guarantees. Canal invoices presented for payment against these accounts were credited to the Commission account in the U.S. Treasury via Fedwire. This procedure will remain unchanged for the foreseeable future.

Further exacerbating the seriousness of the agency's financial position resulting from the collapse of the Panamanian Banking System was the prospect of all outstanding Commission checks becoming non-negotiable, since through standard check-clearance processes, they would eventually be presented for payment against closed accounts. To protect against this occurring, new accounts were opened at the Chase Manhattan Bank and Citibank in New York, and procedures established wherein all Commission checks flowing through the Federal Reserve system would be short-stopped at New York for final payment. This temporary procedure effectively blocked all Commission checks from being forwarded to Panama for clearance.

Another major hurdle overcome in the agency's effort to normalize its check and cash-handling procedures was the need to provide check-cashing services to the Commission's work force and to Civil Service annuitants whose U.S. Treasury checks had previously been deposited or cashed at local banks. Augmentation of the agency's cashier force and significant increases in Commission cash balances on paydays answered employee check-cashing requirements, while in response to the Civil Service annuitant problem, a payday program was implemented, in coordination with the U.S. military finance offices operating in Panama, to pay these individuals each month.

Finally, in order to meet its banking needs, the Commission opened checking accounts at the American Express banking facility located on a United States military base in Panama. These accounts currently meet the day-to-day checking requirements of the agency.

In one of many actions designed to facilitate an orderly transfer of the Canal to Panama in 1999 free of all liens and debts, the Commission changed its method of accounting for injury claims under the Federal Employees' Compensation Act (FECA). In view of the Commission's finite life and because the liability for injury payments would continue beyond the year 1999, the past practice of recognizing injury claim costs as a Canal operating expense during the year in which the benefits were paid was

inappropriate. Accordingly, in 1989, the Commission changed to the accrual accounting method for FECA claims and began recognizing the full cost of those claims, including projected future benefit payments, at the time accidents occur. Legislation was enacted to establish an interest-bearing account in the U.S. Treasury, entitled The Panama Canal Commission Compensation Fund, into which the Commission, based on actuarial formulas, deposits funds monthly in amounts adequate to cover the costs of all present and future employee FECA payments. Also, effective with that legislation, the administration of all claims and processing of benefit payments was turned over to the Department of Labor.

During 1989, the Commission suffered a falloff in Canal traffic due to changing world trade patterns, and the growing use by Canal customers of alternate means of transportation between the East and West coasts of the United States. Because of rising costs due to inflation and a projected minimal growth in traffic levels, the Commission announced a toll-rate increase of 9.8 percent to be effective October 1, 1989.

During its first 10 years of managing the Canal, the Panama Canal Commission has met its Congressional mandate of operating the waterway as near a break-even basis as possible, generating over $4 billion in revenues while incurring essentially a like amount in expenditures. ■■

The growing container trade represents an important segment of Canal cargo movements.

PANAMA CANAL COMMISSION

COMPARATIVE OPERATING RESULTS
FISCAL YEAR 1980 THROUGH 1989
(Dollars in Thousands)

	FY 1980	FY 1981	FY 1982	FY 1983	FY 1984	FY 1985	FY 1986	FY 1987	FY 1988	FY 1989	TOTAL
Total operating revenues....	$369,409	$388,026	$431,984	$393,957	$404,415	$406,723	$424,301	$436,135	$449,409	$435,739	$4,140,098
Total operating expenses....	366,710	338,943	430,688	398,090	397,578	405,604	422,288	436,725	$451,227	443,355	4,141,208
Net income or (loss)	$2,699	($917)	$1,296	($4,133)	$6,837	$1,119	$2,013	($590)	($1,818)	($7,616)	($1,110)

The operation of the Panama Canal is conducted on a self-financing basis. This is in accord with the Panama Canal Act of 1979 which established the Panama Canal Commission as an agency of the Executive Branch of the United States Government with the responsibility for the management, operation and maintenance of the Panama Canal.

The Commission is expected to recover through tolls and other revenues all costs of operating and maintaining the Canal, including interest, depreciation, capital for plant replacement, expansion and improvements, and payments to the Republic of Panama for public services and annuities, in accordance with paragraph 5 of Article III and paragraphs 4(a) and (b) of Article XIII, respectively, of the Panama Canal Treaty of 1977. In addition, paragraph 4(c) of Article XIII of the Treaty provides for a profit payment to the Republic of Panama, of up to $10 million per year, out of Canal revenues to the extent that operating revenues exceed expenditures in any one year.

During the ten years since its establishment, the Panama Canal Commission has generated operating revenues and expenses totaling $4.1 billion, each, with a nominal $8.9 million paid to the Government of Panama under the provisions of paragraph 4(c) of Article XIII of the Treaty. Throughout this period, the Commission also spent almost $1.1 billion to maintain the Canal channels and its infrastructures. In addition, the Commission has invested some $260 million in capital improvements and plant replacements during that period.

The cumulative financial results for this ten-year period demonstrates that the Commission has operated essentially on a break-even basis as required by the law. It has met this statutory requirement while at the same time modernizing the Canal to assure the efficient, safe and economical transit of vessels for the future. This is an extraordinary accomplishment given the complexities inherent in the Canal operations and the changes wrought by the Panama Canal Treaty of 1977. On October 1, 1979, a toll rate increase of 29.3% was implemented to offset increased payments to Panama out of Canal revenues mandated by the treaty. A later increase of 9.8% was implemented in March 1983, due primarily to the loss of the North Slope oil traffic following the opening of the trans-Isthmian oil pipeline. A toll increase of 9.8% was approved to be effective at the beginning of FY 1990 due to inflation and the projected minimum growth in traffic levels.

In less than one day, tourists on board luxury cruise liners can enjoy a transit through the Canal and a two ocean cruise.

Implementation of The Panama Canal Treaty

Concurrent with the dramatic increase in Canal traffic demands in the early 1980's, the management of the Panama Canal Commission faced the complex task of implementing the Panama Canal Treaty. Prior to entry into force of the treaty, the Canal organization consisted of two U.S. Government agencies, the Canal Zone Government and the Panama Canal Company. The Canal Zone Government administered the various civil functions such as: schools, hospitals, postal services, sanitation, fire, police protection, and the judicial system. The Panama Canal Company included commercial operations such as ports, the Panama Railroad, and commissaries, as well as the basic marine and engineering functions directly connected with the operation of the waterway. The administration of both organizations was the responsibility of the Governor of the Canal Zone/President, Panama Canal Company, who was responsible to a Board of Directors appointed by the Secretary of the Army in his capacity as principal stockholder of the Canal Company. The Secretary also served as the direct representative of the President of the United States in the supervision of the Canal Zone Government.

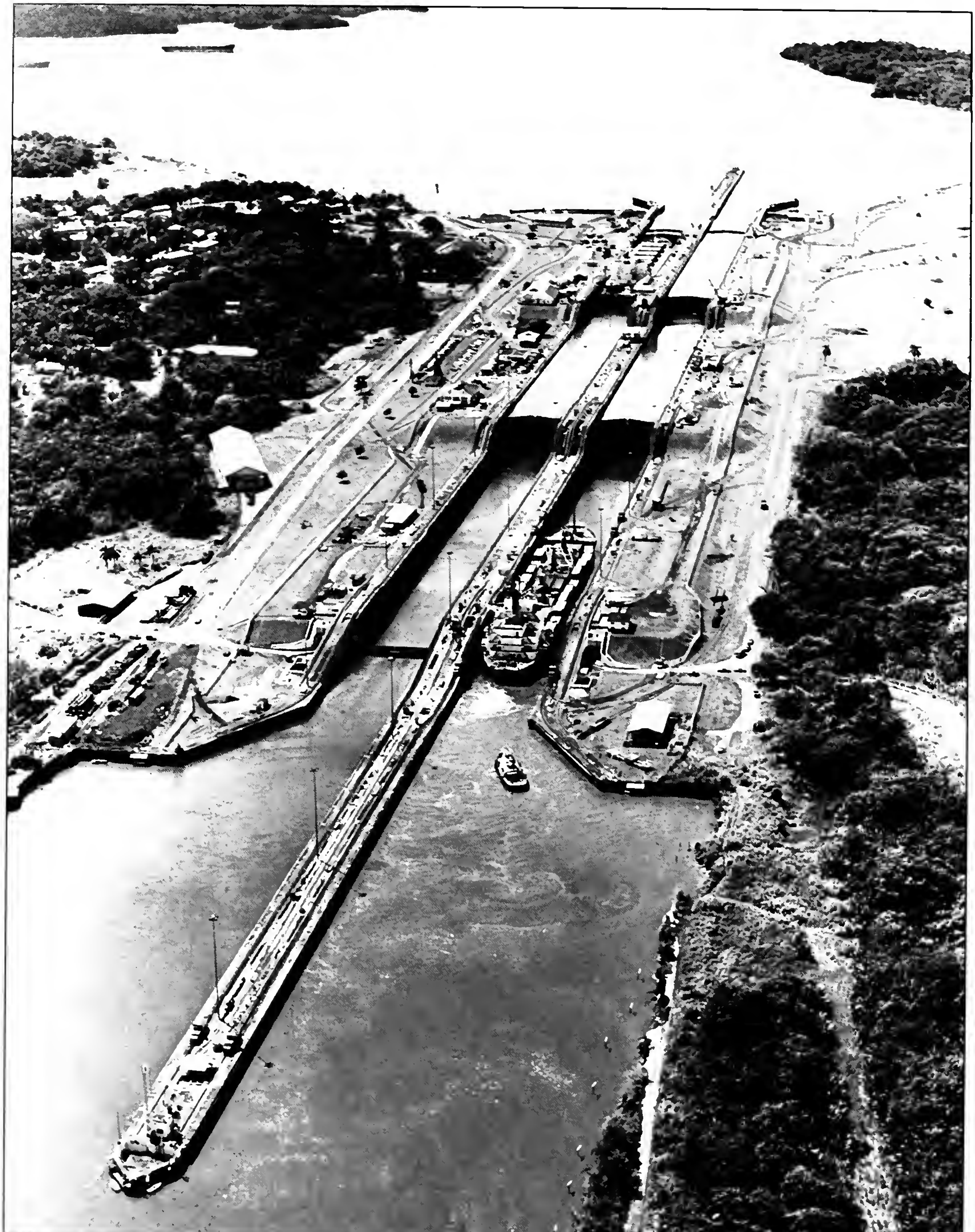
Pursuant to the terms of the treaty, the Canal Zone Government and Panama Canal Company were disestablished. The Republic of Panama assumed jurisdiction over the former Canal Zone, including all aspects of law enforcement, the responsibility for operating Canal area ports and the Panama Railroad, and for providing many of the public services. The Canal's former health and educational services were transferred to the U.S. Department of Defense while the primary functions directly associated with the operation of the Panama Canal were retained by the new Panama Canal Commission.

Implementation of the treaty had an immediate effect on the lives of employees, their families, other residents of the surrounding communities, and on the many service oriented entities or activities operating within the former Canal Zone. All independent activities such as churches, social and fraternal organizations, commercial activities and land leases operated under the laws and regulations of the Canal Zone came under the jurisdiction of the Republic of Panama.

The establishment of the new Panama Canal Commission, with responsibilities essentially limited to the efficient and safe passage of ships through the waterway, combined with the transfer of some major functions to the U.S. Department of Defense and the Republic of Panama resulted in a massive reorganization of the Canal work force. The total full-time permanent work force of the Canal organization just prior to entry into force of the treaty exceeded 12,000 employees including U.S. citizens, Panamanians, and a small number of citizens of other nations. With the advent of the treaty, the new Panama Canal Commission work force was reduced to about 8,000 employees. At the end of the decade, there were approximately 7,600 permanent Commission employees.

In a joint spirit of cooperation, Panamanian and Commission firefighters have ensured effective delivery of fire protection services in the Canal area.

To conduct the orderly passage of jurisdiction to Panama, the treaty provided for a 30-month transition period during which the criminal and civil laws of the United States were applied concurrently with those of Panama in those parts of the former Canal Zone where the U.S. retained installations or had been granted use rights. During the transition period, the Panama Canal



View of Gatun Locks looking south—Carefully planned maintenance and improvement programs have kept the Canal in excellent operating condition throughout the ten years following entry into force of the Panama Canal Treaty.

Commission was permitted to exercise police authority and to maintain a police force. Throughout this period, joint U.S./Panama police patrols provided law enforcement for the Canal area. Additionally, the court systems in the former Canal Zone were permitted to handle all pending and most new criminal cases, but only those civil cases on the courts' dockets prior to October 1, 1979. Under a Prisoner Transfer Agreement concluded in 1980, prisoners serving sentences in the Canal Zone Penitentiary at Gamboa at entry into force of the treaty were given the option of completing their terms in the Panamanian penal system or requesting transfer to a detention facility within the United States operated by the U.S. Bureau of Prisons. On March 31, 1982, the Commission's transitionary police force and the U.S. judicial system on the Isthmus were disestablished.

Title to all housing formerly owned by the Panama Canal Company passed to Panama at entry into force of the treaty, with the United States granted the use of those units for housing eligible Commission employees and their dependents. The Commission continued to manage, maintain, improve, rent and assign the houses during the decade. However, since the treaty provided that housing in excess of Commission needs would be transferred to Panama, 2,786 housing units, or nearly 65 percent of Canal agency's pre-treaty inventory of 4,300 units, were released to Panama. That figure exceeds the treaty mandated requirement for at least 30 percent of all Commission administered housing to be transferred within 10 years after entry into force. It also exceeds, well ahead of schedule, the requirement to transfer to Panama at least 60 percent of Commission housing by the end of the 20-year treaty period.

The Commission also transferred to Panama a number of other buildings and structures in addition to housing which the Canal agency determined to be unnecessary to the performance of its mission or which were specifically identified for transfer in the treaty documents.

In addition, the treaty negotiators recognized the need for a formal, effective channel of communication between the United States and Panama. Accordingly, the treaty established a Coordinating Committee for that purpose. Subsequently, a number of binational subcommittees were established by the Coordinating Committee to address specific areas of interest such as fire protection, housing, and lands and facilities matters. The treaty also created a binational Ports and Railroad Committee as a subcommittee of the Coordinating Committee.

These forums successfully resolved a wide variety of binational issues in a practical, cooperative way. Among its accomplishments, the Coordinating Committee developed procedures for effecting the transfer of custody of U.S. citizen employees of the Commission and their dependents who were detained by Panamanian civil authorities. That body also resolved various housing related issues, effected the transfer of excess Commission housing and other property, and addressed matters pertaining to land and facility utilization. In addition, the Coordinating Committee served as the initial level for receiving and reviewing treaty related complaints and protests, and passed on to the diplomatic level those which were not successfully resolved.

Although forums were in place to coordinate pre-treaty actions of U.S. Federal agencies, effective implementation of the treaty also required a high degree of cooperation and communication among the Canal agency, U.S. Southern Command, U.S. Embassy and other Federal agencies operating in the Republic of Panama. The massive overnight transfer of properties, functions, personnel and associated costs on October 1, 1979, to other Federal agencies presented one of the most significant challenges to the Canal organization in the initial phase of treaty implementation. To provide for a smooth and effective transition, various committees and points-of-contact were established within each agency to address specific areas and problems. Periodic group meetings were held with agency representatives to discuss matters of mutual interest and the progress of the transition process. These measures contributed greatly to a successful transfer-of-functions as prescribed by the treaty. A variety of mechanisms and high level forums were also utilized, in which a continuum of issues regarding United States-Panama relations were discussed and where problems were resolved.

The long-term and multi-phase characteristics of treaty implementation also required constant interaction between all Federal agencies throughout the decade. These efforts were later intensified by the presence of serious ongoing political and economic problems in the Republic of Panama from June 1987 forward, which tended to shift attention toward the safety and security of Canal area facilities, personnel and dependents to ensure a continuity of efficient Canal operations, while moving ahead with the original objectives of treaty implementation. ■■

Signing ceremony extending the collective bargaining agreement between the Panama Canal Pilots Branch and the Panama Canal Commission.

A skilled Panama Canal pilot guides a large bulk carrier during lockage operations.

Employee and Community Relations

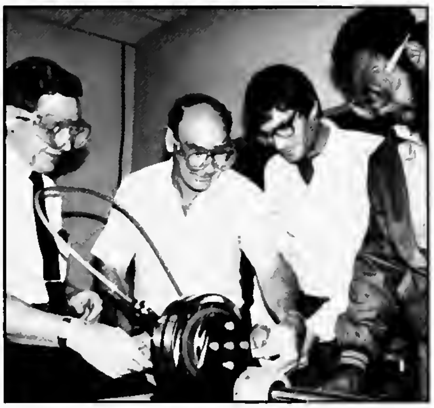
During the pre-treaty years, when the work force numbered more than 12,000 and the administration exercised complete jurisdiction over the former Canal Zone, the Canal agencies shared an intimate relationship with Canal area communities and the thousands of employees and their families residing there. Practically every aspect of personal and social life was touched in one form or another by the activities, services and, laws and regulations of the former Canal Zone Government and the Panama Canal Company. Commercial activities related to the efficient functioning of the Canal, fraternal and social organizations, houses of worship, and public service organizations were equally affected. These activities operated in a structured and protected environment, heavily patronized or actively supported by employees and the Canal community in general.

Recreational and social activities provided diversion for employees and their families and issues of community concern were debated at regular town meetings, with duly elected representatives bringing issues to the attention of the Canal's administration. Personal, corporate and employment related matters requiring legal attention could be addressed through the U.S. judicial system on the Isthmus. Employment policies and programs of the Canal organization were subject to or patterned after the U.S. civil service system.

While many Canal area activities and services were either discontinued or transferred in conformity with the provisions of the treaty, a two and one-half year transition period allowed employees to adapt gradually to the new environment. With cooperation and dedication on the part of individuals from both the Republic of Panama and the United States, the transition period transpired almost flawlessly.

Resident Advisory Committees were formed within the communities to assume some of the functions of the former Civic Councils. These committees provided an avenue of continued communication between the Canal administration and the community. The Office of Ombudsman, created by legislation, served as an additional channel for all employees and the community to express and resolve issues of mutual concern; an open-door policy within the Canal administration supplemented other internal agency channels of communication.

Another major aspect of the Panama Canal Treaty was the recognition by the United States and Panama, that Panamanians would participate increasingly in all facets of the Canal operation. To accomplish this objective, preference was given to the hiring of Panamanians based on the merits of the candidates and without establishing hiring quotas. The following chart reflects the impact of the Treaty on manpower levels and the progression of Panamanian participation for selected periods for the first decade of the Panama Canal Commission.



Technical personnel receive classroom instruction as well as hands on training.

Permanent Work Force

Throughout the decade, actions to increase Panamanian participation were accomplished in a manner generally consistent with the United States federal merit system principles, the Panama Canal Treaties and the Panama Canal Act of 1979. The Panama Canal Employment System provided for job security and the retention of important employee benefits which were critical to maintaining a skilled and motivated work

Permanent Work Force

	U.S.	Panamanian	Third Country National	Total	% Panamanians
09/79 (Pre-Treaty)......	3,095	8,432	612	12,139	69.5%
10/79	2,105	5,521	350	7,976	69.2%
10/81	1,865	5,765	377	7,907	72.9%
10/83	1,651	5,922	228	7,801	75.9%
10/85	1,353	5,992	181	7,526	79.6%
10/87	1,169	6,269	141	7,579	82.7%
10/89	993	6,513	96	7,602	85.7%

force. It also served to attract capable Panamanians who would be responsible for managing and operating the Canal in the years ahead. Personnel policies and training programs were designed to allow the Commission to achieve its goal of a virtually 100 percent Panamanian work force by the year 2000, while continuing to insure fair and equitable treatment to all employees for the duration of the Treaty.

Since the first day, Commission policy established training as one of the most important missions of the Canal agency, second only to the transiting of vessels through the waterway. Accordingly, high priority was given to training programs to accelerate Panamanian participation throughout the organization. A full scope of training programs was designed, ranging from clerical, administrative and managerial fields to the professional, craft and pilot force.

The following table compares Panamanian participation in key occupations upon entry into force of the treaty with the levels as of September 30, 1989.

Key Occupations

	October 1979		September 1989	
	Number of Panamanians	%	Number of Panamanians	%
Skilled Crafts	568	58.7	860	84.9
Professional and Managerial	44	13.8	143	42.6
Floating Equipment	39	20.0	187	70.6
Power Group	9	23.0	30	68.2
Canal Pilots	4	1.7	61	26.8
Total	664	38.1	1,281	67.9

OVERALL INCREASE IN KEY OCCUPATIONS: 29.8%

Other Employee Programs

Recognizing the significant impact of Treaty implementation on the lives and morale of employees and the community in general, the Commission took certain measures to ameliorate its effects. For example, an Equity Package, consisting of free housing, utilities expanded travel benefits and U.S. diplomatic pouch mail service was granted to eligible employees whose U.S. military shopping and postal privileges expired on September 30, 1984, in accordance with treaty requirements.

Additionally, with changing world events and more than two years of unresolved political problems in Panama, personal and industrial security became increasingly important issues. Security assessment surveys were conducted to evaluate Commission needs for plant protection and physical security. To provide greater employee safety and security, access to Commission worksites and facilities was limited. Although the Commission maintained a small trained guard force for the protection of vital Canal installations, the Panama Defense Forces and, ultimately, the United States military forces in Panama were prepared to provide necessary backup security. In support of this responsibility, U.S. forces have conducted a number of readiness exercises at Canal installations in cooperation and joint planning with the Panama Canal Commission. The Canal's guard force was augmented by expanded use of closed-circuit television monitoring systems and more foot patrols and mobile units were utilized at vital installations. Increased use of electronic intrusion and motion detection systems and installation of high intensity lighting in many of these areas, including Commission- managed employee housing, were provided to add to the level of security.

In view of the important benefits of employee fitness, the Commission strongly encouraged and supported employee health and recreation programs. Occupational health clinics were maintained at major Canal facilities to provide a range of health care services. These facilities were equipped and staffed to handle new requirements for drug and alcohol testing and counseling. A number of physical fitness facilities were also established in areas relatively close to Commission work sites for use by all

employees and dependents. Trained instructors directed and supervised the fitness and recreational programs. These services provided some relief to employees and dependents from stresses brought about by the treaty implementation process, changes in the work environment, and the political and economic difficulties in Panama.

Industrial Relations

At the beginning of the decade, the Panama Canal Commission embarked on an entirely new direction in labor-management relations. The Federal Service Labor-Management Relations Statute, included in the Civil Service Reform Act of 1978, was made applicable to the Panama Canal Commission. In addition, the Panama Canal Act of 1979 amended the labor relations statute to include all non-U.S. citizen employees of the Commission. This latter action was unique in the history of U.S. Federal labor-management relations. The Panama Canal Act also preserved the pre-treaty practice that permitted employees to be represented by labor organizations without regard to their supervisory status.

With the application of the Statute, the International Organization of Masters, Mates and Pilots, Marine Division, AFL-CIO, pilot membership group, became the first labor union to be certified as an exclusive representative in the Commission. Contract negotiations with the pilots union began in May 1980 and the first contract became effective on January 2, 1981. Later in 1981, other labor organizations were certified to represent each of the Commission's four remaining bargaining units as follows: the Maritime/Metal Trades Council, AFL-CIO Panama Area (a union coalition consisting of the National Maritime Union, the International Organization of Masters, Mates and Pilots [Atlantic & Gulf], and the Panama Area Metal Trades Council) representing both a professional and non-professional bargaining unit; the National Marine Engineers Beneficial Association and District No. 1—Pacific Coast District, AFL-CIO, representing a licensed marine engineer unit; and Local No. 13, International Association of Firefighters AFL-CIO, representing a unit of firefighters. These four bargaining units, together with the pilots unit, comprised the organized labor structure of the Panama Canal Commission representing over 95 percent of the Commission work force.

Security awareness is emphasized throughout the Commission. Access to Canal worksites and facilities is limited.

Following the negotiation of the pilots contract in 1981, successful negotiations were completed with the remaining bargaining units. The professional bargaining unit contract—the fifth and last original contract—became effective on April 11, 1984.

Traditional labor-management relations activities during the period between mid- 1984 and early 1989 were about equally divided between routine contract administration activity and renegotiation of two of the original five collective bargaining agreements. As a result of efforts to promote more constructive labor relations, unions gained greater access to the Commission's top management officials. From June 1987 through the end of the; decade, however, an ever-increasing preoccupation with external political affairs became the focus of virtually all employees and the unions.

Political and Economic Crisis in Panama

An unforeseen challenge, over which the Commission had no control, was a political and economic crisis in the Republic of Panama, which began in June 1987. As the crisis continued to worsen, both U.S. and Panamanian employees were subjected to increased difficulties and personal hardships.

Of particular concern was the increasing harassment of Commission employees by the regime of General Noriega. Following the application of U.S. economic sanctions in April 1988, Canal payments to Panama required under the Treaty, were placed in escrow in the United States rather than being transferred to the Noriega regime. Included in these sanctions, were the income, social security and educational tax monies deducted from the salaries of Panamanian employees by the Panama Canal Commission. On July 5 of that year, based on humanitarian criteria, the Commission was authorized to reinstate certain payments to the Panama Social Security System.

As an outgrowth of the sanctions issue involving the various payroll tax deductions, Noriega regime officials strictly enforced a decision prohibiting Panamanian Commission employees from obtaining national tax-clearance certificates (Paz y Salvos). Consequently, Panamanian employees were effectively denied permission to travel abroad, purchase or sell real estate, engage in commercial activities, or to receive packages through the mail or customs. Further complications developed as the regime later determined that the Paz y Salvo was also required for employees to obtain license plates for personal vehicles, thus depriving Panamanian Commission employees use of their automobiles for travel to and from work. In addition, Panama's Ministry of Finance and Treasury initiated legal action against 36 Commission employees to collect these tax monies, and threatened to include other employees in this action. In some cases, private bank accounts were frozen and personal vehicles seized.

Other actions contributing to heightened tension included a national strike; suspension of civil liberties; restrictions on free speech and the news media; sporadic closure of public offices, institutions and schools in Panama; intermittent use of roadway checkpoints by Panama law enforcement officials to conduct random searches of pedestrians and motor vehicles and confiscation of personal effects; imposition of fines for unsubstantiated charges; civil disturbances; and, an extended bank closure declared by the Panama National Banking Commission, which subsequently issued severe restrictions on withdrawals from checking, savings and time deposit accounts.

Commission housing areas and Canal operating facilities incurred significantly increased reports of vandalism and property theft, including many privately owned and some official motor vehicles. At various times, diminishing food supplies in public markets and a general perception that the local shopping areas were unsafe caused particular concern for many employees forced to live on the economy.

To ensure the welfare of Commission employees, as well as a continuity of Canal operations, extraordinary measures were undertaken, including implementation of a range of contingency plans. The Commission began providing food boxes at cost to employees, when food supplies in Panama stores were severely depleted or inaccessible due to civil disturbances. Occasional use of temporary emergency lodging and rations became necessary for employees held over at their duty stations. On March 1, 1989, a costly emergency shuttle bus service on both sides of the Isthmus was made available for employees at designated pick-up points in the terminal cities, which the Commission was not able to discontinue until the end of August. Employees who were prevented from using their privately owned vehicles to travel to work because Panama authorities refused to issue license plates were allowed to claim a $7 per day transportation allowance. High speed launches were also utilized to shuttle employees between work stations along the Canal when safe overland transportation was not possible. The overall cost of these transportation initiatives exceeded one half million U.S. dollars per month. Eligible U.S. employees were also granted special authorization for limited U.S. military shoppette (convenience store) privileges, because of the political and economic difficulties. Additionally, a voluntary relocation plan was approved for dependents of U.S. employees desiring to leave Panama to temporarily reside in the United States.

Despite high levels of frustration brought about by the yet unresolved political and economic crisis, Commission employees continued to perform admirably. Accident and safety levels were within normal range, the absentee rate was exceptionally low, and vessels continued to transit the waterway safely and efficiently. Although Canal operations remain normal, it is imperative that the political crisis be resolved to allow the Commission to dedicate itself to the essential task of providing efficient transit service, and fulfill the treaty commitments for the orderly transfer of the Canal to Panama on December 31, 1999. This will also enable Panama to redirect its attention to the demanding requirements inherent in its future responsibility as the next steward of the Panama Canal.

Future of the Waterway

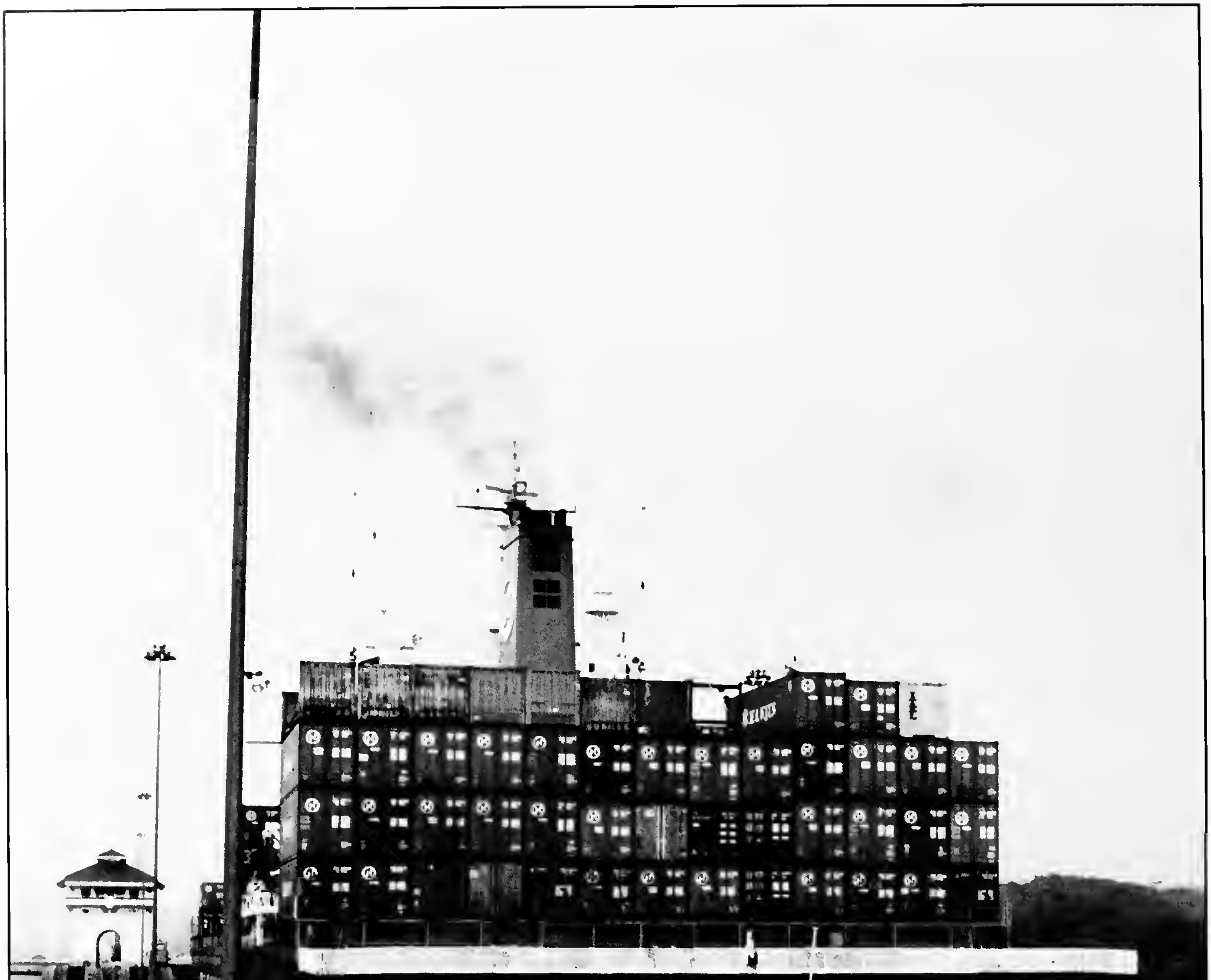
Ten years after the implementation of the Panama Canal treaties, the Panama Canal remains an important international transportation artery. Over 93 percent of the world's oceangoing ships are able to pass through the waterway and, each year, some 12,000 vessels transit the Canal carrying more than 150 million tons of cargo over many of the world's principal trade routes. Cargo passing through the waterway accounts for some 5 percent of all the world's oceanborne trade.

Looking ahead, current estimates forecast modest growth in most Canal trades. Cargo through the waterway is expected to reach more than 220 million tons by the year 2010. Concurrently, oceangoing transits should rise from 33 per day at present to 38 daily. While Panamax vessels, the largest the Canal can accommodate, are anticipated to reach about 36 percent of Canal transits in the next two decades, the average size growth rate will tend to slow.

With regard to trade patterns, the United States and Japan are expected to continue as the most important users of the Panama Canal. Some Central and West Coast South American countries, however, are proportionally more dependent on the waterway. The Canal offers many of those Latin countries the only efficient, cost-effective means to transport large quantities of cargo. Future economic growth in those nations will continue to be closely linked with the Panama Canal.

Although the Canal provides an absolute advantage to many countries of the world, the waterway operates in an increasingly competitive world. Alternatives to the Canal abound including the intermodal transport system in the United States, pipelines, use of larger vessels to bypass the waterway, and a variety of trade relationships which could change if Canal service deteriorates or tolls are raised excessively. The emergence of these alternatives requires that the Canal continue to provide efficient, low-cost transit service to the maritime industry, if the waterway is to remain a vital link in the world transportation chain.

Internally, Canal management also faces a number of major challenges in the years ahead. While the Panama Canal Commission will continue to fulfill its mission in the coming decade, the Republic of Panama must prepare to assume stewardship of the waterway and the vital international responsibility to maintain high quality transit service beginning in the year 2000. The nature of the new organization, treaty responsibilities, quality training, prudent financial management, tolls policies, application of modern technology, and personnel procedures are all critical areas which Panama must address. Existing Commission employment, wage, equal opportunity and collective bargaining principles and systems are designed to accommodate the special objectives of the Canal operation and they have contributed significantly to a stable, highly motivated work force. Job security and assurances that equitable and well-defined systems will be continued are essential to ensure the retention of a highly skilled Panamanian work force, as well as allow the Canal to continue to attract qualified employees from the domestic labor market. With the achievement of these goals and orderly, planned maintenance programs, innovative improvements and adequate capital investment, the Panama Canal should remain a modern, efficient enterprise serving world commerce far into the future. ■ ■



The Panama Canal can safely handle commercial oceangoing vessels with beams up to 106 feet.

Historical Calendar

1979

September 30—Final day of operation of the Panama Canal Company and the Canal Zone Government, in accordance with the Panama Canal Treaty signed on September 7, 1977.

October 1—Entry into force of the Panama Canal Treaty. Panama gains jurisdiction over the former Canal Zone. First day of operation of the Panama Canal Commission, a new agency of the United States Government, responsible for managing, operating, maintaining and improving the Canal through December 31, 1999. Major organization changes took effect, resulting in a substantial transfer of functions and reduction-in-force. A toll rate increase of 29.3 percent also was implemented to offset increased payments to Panama out of Canal revenues mandated by the treaty. The Federal Service Labor-Management Relations Statute was amended to include non-U.S. citizen employees of the Commission. A new Panama Area Wage Base became effective for employees hired on or after this date. Panama Social Security System (CSS) coverage became applicable to all non-U.S. employees hired on or after this date.

November 15—Completion of project to install high mast lighting at Miraflores Locks.

November 30—Gamboa Reach ship channel widening project was completed.

1980

May 28—The Joint Commission on the Environment, established under the treaty, held its first binational meeting in Panama.

June 2-4—The Panama Canal Commission binational Board of Directors held its first meeting at the Administration Building, Balboa Heights, with Mr. Michael Blumenfeld serving as Chairman.

June 7—The second largest oil spill in Canal waters occurred when the TEXACO CONNECTICUT, carrying Alaskan North Slope crude oil, struck the east bank of the Canal north of Gaillard Cut. Of the estimated 4,000 barrels of oil spilled, 1,361 barrels were recovered.

June 11—The Coordinating Committee, established under the treaty, held its first binational meeting in Panama City.

1981

January 2—Pilot contract became effective. This was the first-ever collective bargaining agreement between the Canal agency and a labor union.

April 29—By Executive Order, President Ronald Reagan approved the new official seal of the Panama Canal Commission.

May 31—The new tugboat H. R. PARFITT arrived in Cristobal for delivery to the Commission. This was the first tug equipped with a cycloidal omnidirectional propulsion system.

July 17—Mr. William R. Gianelli was appointed Chairman, Board of Directors of the Panama Canal Commission, to succeed Michael Blumenfeld.

July 22—The new, conventionally propelled tugboat ALIANZA was formally accepted by the Commission.

July 31—General Omar Torrijos, Panama's signatory of the Panama Canal Treaty of 1977, died in a plane crash in the interior of Panama.

September 19—The SS CRISTOBAL, the Commission's only remaining steamship, made its last Panama to New Orleans voyage.

October 15—The new Alianza-class tugboat PROGRESO was formally accepted by the Commission.

December 15—Record cargo of 65,299 long tons transits Canal aboard the ARCO TEXAS.

December 27—Four new locks towing locomotives were delivered to the Panama Canal.

1982

January 10—A new wage system replaced the Panama Area Wage Base, reducing the growing differences between post and pre-treaty wage rates, and improving the Commission's competitive position in recruiting skilled, technical and professional occupations.

February 23—Three new locks towing locomotives were delivered to the Panama Canal.

March 31—End of the 30-month transition period. The Panama Canal Commission's transitionary police force and magistrate's court, as well as the U.S. District Court were disestablished. Also, the Panama Canal Employment System replaced the Canal Zone Merit System and, this was the last day that non-U.S. citizen employees of the Commission were eligible to use U.S. military health facilities for non-job related medical treatment.

April 4—A new signal tower was installed atop the Cristobal Administration Building, to improve traffic control and vessel communication at the Atlantic harbor.

April 28—The first report of Africanized bees in the Canal area was made at the Mount Hope Industrial Division drydock, twenty-five years after their accidental release in Brazil. Special control teams were established to combat the bees.

July 1—The new Alianza-class tugboat AMISTAD was formally accepted by the Commission.

July 3—Three new locks towing locomotives were delivered to the Panama Canal.

September 23—Completion of project to install high mast lighting at Gatun Locks.

October 4—Testing of trans-Panama oil pipeline began. Alaska North Slope oil (ANS) started diverting from the Panama Canal.

December 8—The Office of Health and Safety was eliminated and the Occupational Health and Safety Divisions were transferred to the Office of Personnel Administration. Concurrently, the Personnel Director was appointed as the Designated Agency Safety and Health official.

December 15—Mamei Curve Widening Project was completed, improving navigational safety and visibility.

1983

February 7—A new marketing unit was established within the Office of Executive Planning to handle the Commission's marketing functions.

March 12—A toll rate increase of 9.8 percent was implemented to offset revenue losses stemming primarily from diversion of Alaskan North Slope oil to the trans-Panama oil pipeline.

May 6—Meteorological and Hydrographic Branch installed a WSR-74 S-Band severe weather radar system, to supply data for watershed management programs.

July 11—The Pilot Understudy Program, designed to provide Panamanians an additional means of entry into the pilot force, accepted its first class of nine trainees.

December 20—Completion of a project to install pneumatic fender units at the wing wall knuckles of all locks to prevent vessel contact with the wall during transit.

1984

January 18—The new labor-management Safety and Health Committee was inaugurated.

April 4—A transit reservation system was implemented on a permanent basis for Canal customers desiring a guaranteed transit date.

May 18—Project to deepen Gaillard Cut by three feet was completed.

July 1—Completion of a project to install and integrate new closed circuit television cameras and system components at strategic points along the Canal, with the Marine Traffic Control Center in La Boca.

August 1—The Commission upgraded its data processing capabilities by implementing the use of multiple IBM mainframe computers, and on-line, real-time, remote data entry and inquiry capability by field units.

August 3—A new supervisory control and data acquisition (SCADA) system was installed to allow power dispatchers to more effectively monitor and control Commission power systems.

August 29—Completion of project to install high mast lighting at Pedro Miguel Locks.

October 1—U.S. military postal, commissary and exchange privileges, extended to eligible Commission employees, were terminated in accordance with the treaty. An "Equity Package", comprising free rent, electricity and travel benefits for eligible employees, was instituted by the Commission to help compensate for the loss of these privileges. The Commission also implemented, state-of-the-art financial management systems software in order to fully integrate fund control and accounting. The new system provided the Commission's first on-line real-time data entry and inquiry for financial systems to Commission field units.

1985

March 15—The first class of nine Panamanians in the Pilot Understudy Program were promoted to Pilot-in-Training.

April 2—Installation of a new tug and miter gate repair facility was completed at the Mt.Hope Industrial Division.

July 15—Completion of project to install a new locomotive turntable at the south end of Miraflores Locks.

July 23—The new modified Alianza-class tugboat ESPERANZA was christened at the Dredging Division.

August 15—Construction of a vessel tie-up station was completed just north of Pedro Miguel Locks to improve utilization of the Pacific locks.

September 26—Agreement signed at the United Nations by the United States, Panama, and Japan to form a tripartite commission to study alternatives and or modifications to the Panama Canal.

October 15—Gatun Lake Explosive Anchorage Expansion project was completed, to provide greater anchorage space for vessels transporting dangerous cargoes.

November 5—Pre-employment and incident accident alcohol and drug testing was implemented in the Commission.

December 20—Project to deepen Gatun Lake ship channel by three feet was completed.

December 23—The President of the United States signed into law the Panama Canal Amendments Act, Public Law 99-209, amending the provisions governing vessel accidents.

1986

January 8—Installation of a new locomotive turntable was completed at the south end of Miraflores Locks.

January 30—A project to install new higher capacity telephone trunk lines and touch tone capability was completed for all locks.

May 5—A major new computerized traffic management system was placed into service in the Marine Traffic Control Center in La Boca to improve traffic management and control.

June 6—The Federal Employees' Retirement System (FERS) replaced the Civil Service Retirement System (CSRS) for U.S. citizen employees hired since 1983.

August 1—Recommissioning ceremony was held for the newly renovated MINDI dredge.

August 4—The new modified Alianza-class tugboat PAZ was formally accepted by the Commission.

October 3—Gatun Lake Anchorage Expansion Project was completed.

October 13—A major landslide occurred in the area of Gold Hill in Gaillard Cut, nearly closing the Canal. Ship traffic was limited to one-way passage in the slide area. Normal transit operations were restored on December 23.

1987

January 14—Five new locks towing locomotives were delivered to the Panama Canal.

March 13—The Meteorologic and Hydrographic Branch upgraded its weather satellite receiving equipment to an independent and fully operational Mode AAA Weather Satellite Receiving Station. This equipment allows the Commission to monitor weather patterns on a real time basis over a broad geographical area affecting the Canal's watershed.

June 8—Serious political difficulties in Panama begin to surface from accusations against General Manuel Antonio Noriega by the former second in command of the Panama Defense Forces.

November 4—Record single day's tolls revenue of $1.333 million collected.

November 20—Pacific entrance dredging project was completed.

December 21—The new tugboat GUIA, equipped with a cycloidal omni-directional propulsion system, was delivered to the Commission.

December 24—The Commission purchased catastrophe insurance coverage to protect it against unpredictable revenue losses and expenses arising from catastrophic events.

1988

January 1—The Commission was converted from an appropriated fund to a revolving fund agency with the passage of the Panama Canal Revolving Fund Act. The agency also began standardizing towboat charges for routine transit service.

January 29—The Balboa Central Telephone Office changed over to a new switch system, offering improved and broader telephone services to the agency.

February 26—General Manuel Antonio Noriega's regime deposed Panama's President, Eric Arturo Delvalle, one day following that President's attempt to dismiss General Noriega.

March 3—Deteriorating political and economic situation in Panama requires the Panama Banking Commission to declare an extended bank holiday closing all banks for an indefinite period. The Panama Canal Commission was compelled to transfer its accounts to the U.S. military banking facility in Corozal.

March 12—The new Guia-class tugboat LIDER was delivered to the Commission.

March 28—Due to serious political disturbances in Panama and diminishing food supplies in public markets, Panama Canal Commission began to issue food packages to employees, payable by payroll deduction.

April 2—Eligible Commission employees were granted limited purchase privileges at shoppettes (convenience stores) operated by the U.S. military exchange system, with the approval of the U.S. recognized President of Panama, Eric Arturo Delvalle.

April 8—President Ronald Reagan signed an Executive Order freezing Canal payments to Panama and placing them in escrow in the U.S. This included income tax and Panama Social Security monies deducted from the salaries of Panamanians employed by the Panama Canal Commission.

April 15—The maximum overall length allowable for commercial passenger and container vessels transiting the Canal was increased to 965 feet.

May 27—Dredging of the Atlantic entrance channel to the Canal was completed.

July 5—Based on humanitarian criteria, the Commission was authorized to reinstate certain payments to the Panama Social Security System, which were suspended by the April 8 Executive Order.

July 13—The Panama Canal Commission Board of Directors suspended the regulation pertaining to the number of regular meetings to be held in Panama pending resumption of normal relations between the U.S. and Panama.

August 16—Panama notified the Commission that public services in the Canal area would be provided on a lesser scale, with the exception of fire and police protection.

September 15—Dredging work to level the bottom profile of the Pacific entrance channel was begun.

October 14—Construction work was initiated for the installation of a new locks fire protection system at Miraflores Locks. Completion is scheduled during FY 1990.

November 18—The Miraflores Locks approach channel radius was increased to allow greater maneuverability of wide beam vessels in this area.

December 23—A long-term project to rehabilitate 57 locks towing locomotives and 3 electric locomotive cranes was completed.

December 15—Completion of a project to replace all PCB type transformers at Gatun Locks with new cast coil transformers. A similar project is underway at Pedro Miguel and Miraflores Locks.

1989

January 1—The administration of the Federal Employees Compensation Act was transferred to the U.S. Department of Labor, which assumed the responsibility for adjudicating and processing claims of Commission employees under the Act.

March 1—Contracted bus service and transportation allowance were provided to eligible Panamanian employees due to problems stemming from the political crisis in Panama. The bus service was discontinued on August 31, 1989.

April 3—A project to install a new locomotive turntable at the north end of Gatun Locks was initiated.

April 16—The Office of Inspector General (formerly the Office of General Auditor) was established as required by U.S. law.

May 7—Presidential elections were held in the Republic of Panama. Former U.S. Presidents Gerald Ford and Jimmy Carter, several U.S. Congressmen and international observers were on the Isthmus to witness the balloting process.

May 10—The Noriega regime annulled Panama's May 7 presidential elections.

May 18—Record toll of $109,653.60 paid by passenger ship STAR PRINCESS.

May 19—The Commission began to authorize eligible employees to relocate their dependents at Commission expense under a revised Voluntary Temporary Relocation Program, due to continuing deterioration of the political and economic situation in Panama.

June 1—Mr. Robert W. Page was elected as Chairman, Board of Directors of the Panama Canal Commission, to succeed William R. Gianelli.

July 10—A project to install a new locomotive turntable at the north end of Miraflores Locks was initiated.

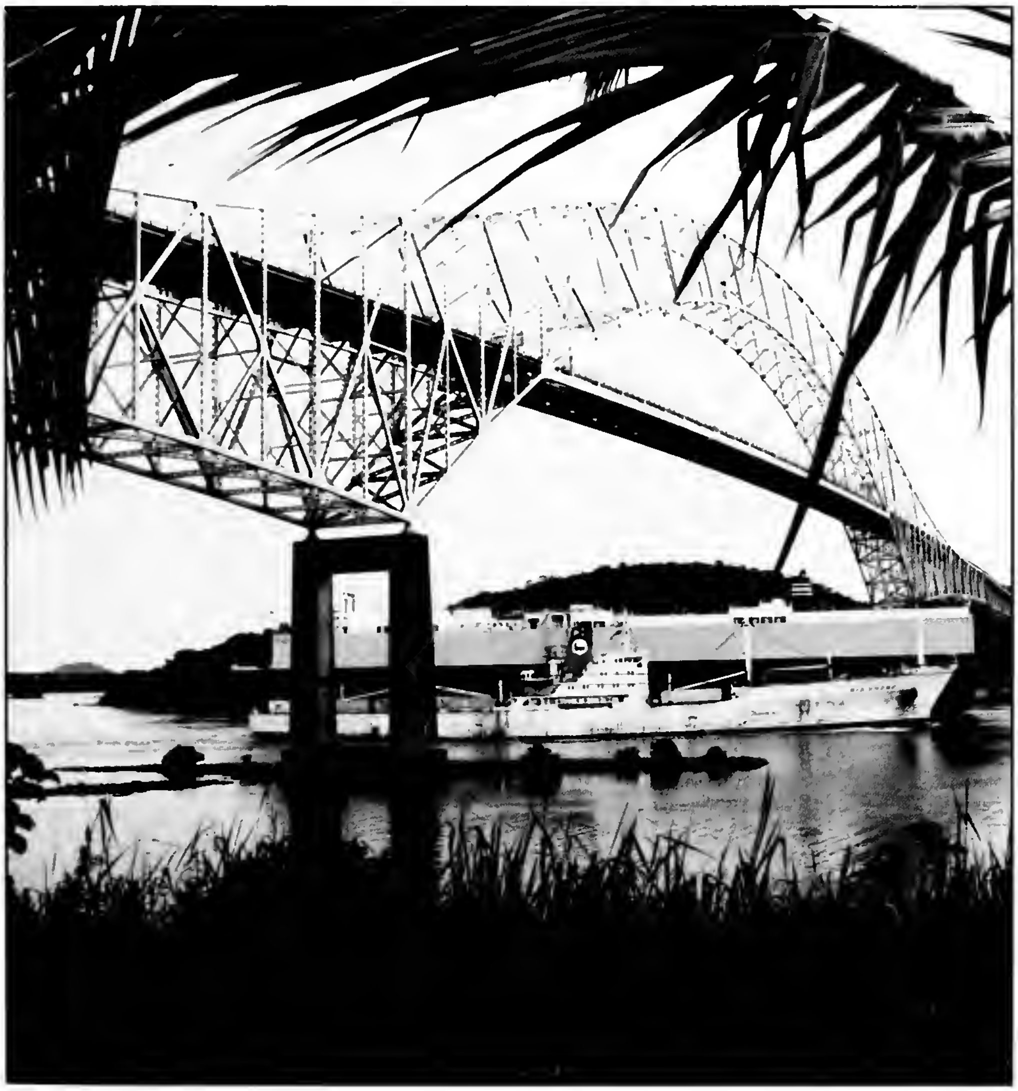
August 11—Widening of Bohio Curve was completed to improve navigational safety and maneuverability.

August 15—The Panama Canal celebrated its 75th year of service to world shipping, commemorating the first official transit of the SS Ancon on this day in 1914.

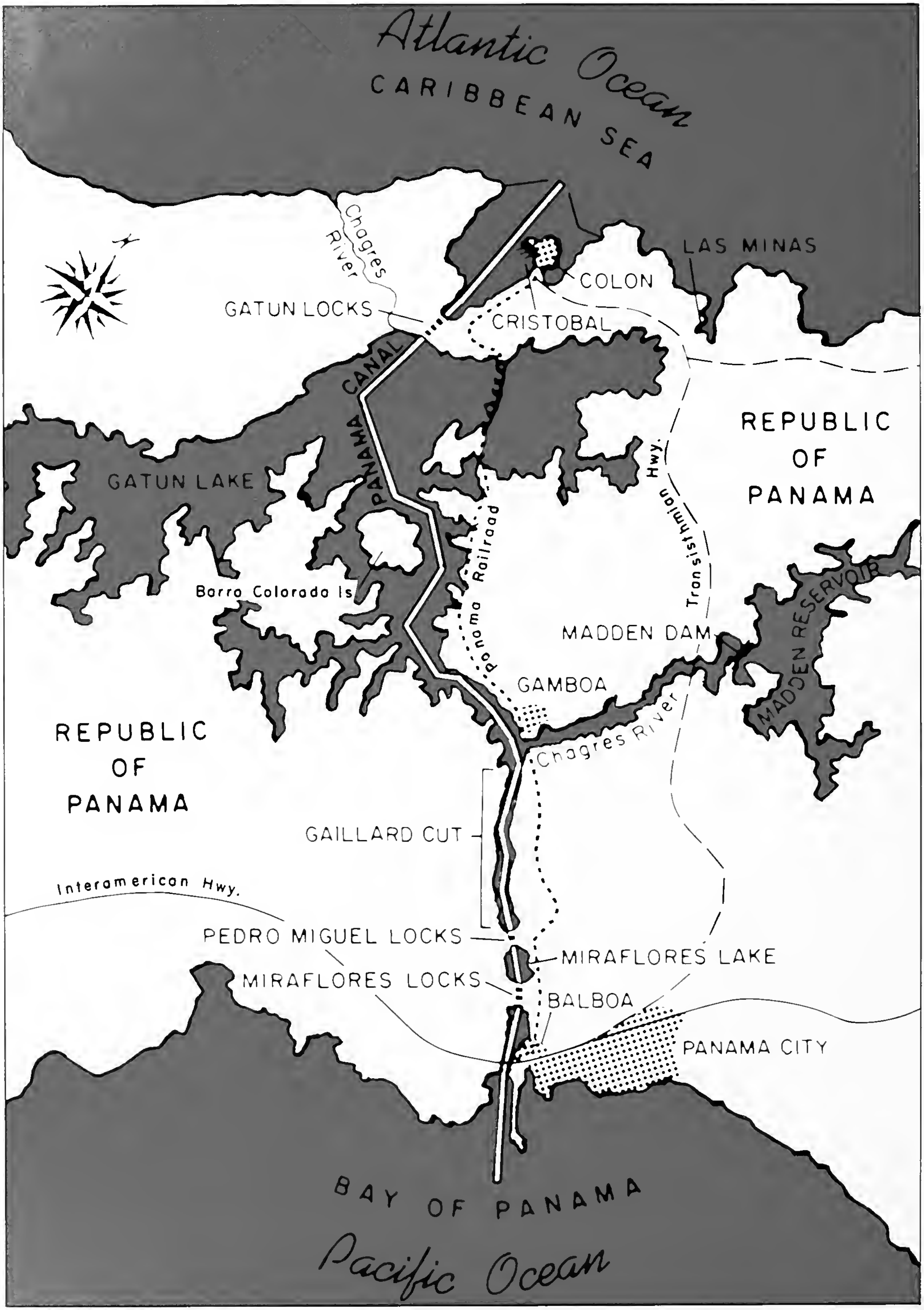
August 19—Two new 50-foot high speed passenger launches were delivered to the Panama Canal, to serve as trans-Isthmian waterbuses beginning October 1.

September 1—The Noriega regime announced the appointment of a provisional president and cabinet.

September 30—A long-term program to rehabilitate some 50,000 feet of towing locomotive track at the locks, including water and landside rail, rack sections and conductor slot was completed. The Panama Canal Commission ended the first decade of operations under the Panama Canal Treaty of 1977.



A large automobile carrier passes under the "Bridge of the Americas" as it prepares to leave the Canal for the open seas following a southbound transit. Another vessel initiating a northbound transit is visible in the foreground.


Atlantic Ocean
CARIBBEAN SEA
Chagres River
LAS MINAS
COLON
GATUN LOCKS
CRISTOBAL
PANAMA CANAL
REPUBLIC OF PANAMA
GATUN LAKE
Panama Railroad
Transisthmian Hwy.
Barro Colorado Is
MADDEN DAM
MADDEN RESERVOIR
GAMBOA
REPUBLIC OF PANAMA
Chagres River
GAILLARD CUT
Interamerican Hwy.
PEDRO MIGUEL LOCKS
MIRAFLORES LAKE
MIRAFLORES LOCKS
BALBOA
PANAMA CITY
BAY OF PANAMA
Pacific Ocean

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OF THE OFFICE OF EXECUTIVE PLANNING

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